THE REPORT

OF THE

PRESIDENT

OF

QUEEN'S COLLEGE, BELFAST,

FOR

THE YEAR 1856–57.

Presented to both Houses of Parliament by Command of Her Majesty.

DUBLIN:
PRINTED BY ALEX. THOM AND SONS, 87, ABBEY-STREET,
FOR HER MAJESTY'S STATIONERY OFFICE.
1858.

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THE REPORT

OF

THE PRESIDENT OF QUEEN'S COLLEGE, BELFAST,

FOR

THE YEAR 1856–57.

TO THE QUEEN'S MOST EXCELLENT MAJESTY.

MAY IT PLEASE YOUR MAJESTY,

In the Report which I had the honour of submitting last year to your Majesty, I brought up the details of the Proceedings of this College to the end of the Session 1855–56. I think it right in the present Report, to furnish a return of its Statistics up to the end of December last, including the first Term of the present Collegiate Session.

The following table presents an attendance of Students in the College, in the Session '49 and '50, larger than existed in any one year up to the end of '55–56. This is to be accounted for by the fact, that, at the opening of the College, many of the Students who then entered did so in order to complete courses which they had commenced in other Institutions; and also by the circumstance that the College not having been opened for a year or two after its inauguration was expected, a number of them waited on its postponed opening, thus producing an accumulation of Students at the time, and particularly of the Non-matriculated.

The natural condition of the College dates from Session '52–53, and from that period till now there has been a steady and encouraging annual increase; so that the numbers which stood in the former-named Session at 154, have now risen to 207, as, at present, in attendance at the College. The increase of Matriculated Students is particularly gratifying. Of these, there existed in the Session '52–53 101, whilst now they amount to 153, exclusive of the 54 Non-matriculated Students (principally Medical ones) who attend Lectures.

RETURN of the Total Number of Students attending the College in each year since its opening.

Session.	Matriculated.	Non-matriculated.	Total.
1849–50,	90	105	195
1850–51,	110	75	185
1851–52,	120	69	189
1852–53,	101	53	154
1853–54,	114	54	168
1854–55,	118	65	183
1855–56,	119	74	193
1856–57,	136	58	194
1857–58, for so far,	153	54	207

The subjoined table gives a return of the proportions of the different denominations of the Students who have attended for the last Session and the present one :—

DENOMINATIONAL RETURN.

	Sessions.			Sessions.	
	1856-7.	1857-8.		1856-7.	1857-8.
Established Church,	35	31	Seceders,	1	1
General Assembly,	113	126	Independents,	2	1
Non-Subscribing Presbyterians,	11	19	Baptists,	2	1
Roman Catholics,	14	15	Various,	7	2
Wesleyan Methodists,	3	4	Total,	194	207
Covenanters,	6	7			

The results of the steady increase of numbers; of the success of the Students who have been candidates, whether for Graduation and Honors, in the Queen's University; or for high and important offices in the State, under the competitive system now adopted, or under the examinations for testing positive qualification and merit, will be found to be so satisfactory as to justify the inference, that the Courses adopted in the Queen's Colleges are, on the whole, consonant with the present advancing acquirements of Science and Literature; whilst the efforts and instructions of the distinguished Professors appointed by your Majesty to preside over their several departments, have not been exceeded by any corresponding men in any quarter of the Empire.

Competitive Examinations for the Civil and Public Service being now so extensively established, it will not be out of place to refer to a few instances of the success which has attended some of the Students of this College who entered the lists for appointments. The last Report of the Woolwich Examination affords proof that a Student of this College had been assigned last year the first place at entrance, his marks having been 1,100 above the next best of his numerous competitors; and also that he continues to show remarkable superiority, particularly in Mathematics and Chemistry. I embody the official return of the last examination of the Civil Service of the East India Company.

LIST OF THE SUCCESSFUL CANDIDATES.

Name.	Age on the 1st May, 1857.	Place of Education.	Marks.
Mr. Beveridge,	20	Queen's College, Belfast,	2,427
Mr. Carpenter,	20	Brighton College,	2,374
Mr. Munroe,	18	Edinburgh University,	2,311
Mr. Barkley,	21	Queen's College, Belfast,	2,307
Mr. Wavell,	18	St. John's College, Cambridge,	2,207
Mr. Duthoit,	22	Exeter College, Oxford,	2,119
Mr. Howell,	22	St. John's College, Oxford,	2,100
Mr. Tracy,	21	Trinity College, Dublin,	2,092
Mr. Crosthwaite,	21	St. John's College, Oxford,	2,087
Mr. Smyth,	21	Queen's College, Belfast,	2,051
Mr. Sutherland,	22	Lincoln College, Oxford,	1,941
Mr. Moens,	22	Merton College, Oxford,	1,914

It is worthy to be recorded, in connexion with this, that, in February, 1856, a Committee of Council of this College was appointed to consider a plan whereby prizes might be held out for competition by Students pursuing a fixed course of study with a view to public appointments. Their suggestions were submitted to a joint meeting of the two divisions of the Faculty of Arts, on March 13th, who reported to the Council on the 19th of April. The Council resolved to grant in that Session a special prize, or prizes, for the encouragement of superior attainments among the advanced Students of the College, who had previously attended classes in any of the Queen's Colleges for at least three years, and should be in attendance in this College on any class which extended through at least two Sessions. The Examination was held in March, 1857, when two candidates presented themselves—viz.: John Watt Smyth and David Graham Barkley, who underwent an examination in

English Literature,
Modern History,
Modern Languages,
Mathematics,
Natural Philosophy,
Chemistry,
Natural History,

Physical Geography,
Geology and Mineralogy,
Logic,
Metaphysics,
Jurisprudence, and
Political Economy.

The answering of these two gentlemen was of such a nature that the Council awarded a prize to each. These were two of the three gentlemen who distinguished themselves so highly afterwards at the Indian Examination. Referring to the labours of the Professors, the Table of the number of Lectures delivered by each of them, in every Session, will afford a general view of their individual and united exertions to advance the interests of the College and of the Students. The exertions of the Professors, so far from being constrained, are the result of an earnest purpose to impart to the whole body of the Students the greatest amount of knowledge, in the best manner, and after thorough preparation for their prelections and illustrations. The Table referred to is in the Appendix, No. 4.

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* Examinations for a Special Prize in the present year have been appointed to be held in March, and four of the advanced Students have presented themselves as competitors.

Next to the zeal and learning of the Professors, I must attribute the success of the College, in no small degree, to the means of instruction now afforded through the grant made annually by Parliament for a proper Library, and also for supplying the general Museum, the Chemical Laboratories, Physical Cabinet, Engineering Department, &c., with collections of apparatus, and with objects of illustration and experiment, the want of which was highly injurious and discouraging in the early history of the College. The Library is now being gradually supplied with standard and special books on Ancient and Modern Literature and Philology; on the Mental, Mathematical, Physical, and Chemical Sciences; on all the departments of the Natural Sciences; on those of Law and Political Economy; on the various branches of Medical Science, as well as on those of Engineering and Agriculture, besides with works of general interest. The Museums are being made up with great care and strict economy. The advantage of being able to procure a number of new publications and new objects of illustration as they appear, is highly appreciated both by the Professors and Students.

The Bursar's return of the distribution, for the year ending March, '57, of this grant, which is allocated under Governmental arrangements and checks, and watched over by the President in his individual capacity, and by the Council as a body, will be found in the Appendix, No. 3.

Feeling confident that neither Professors nor Students could keep pace with the advancement of Science, Art, Literature, and Medicine, without these constant supplies, I have furnished in the Appendix an enlarged digest of the various subjects which constitute the Collegiate Courses; the perusal of which will show at once the breadth and nature of the knowledge imparted, and the necessity of all the proper means of conveying it to the Students, and through them to the community.

Connected also with this, I feel it to be my duty, overlooking for the present year the Statutes as to the manner of entering the College, and proceeding to Degrees in the Queen's University, as given in my last Report, to publish some of the papers used at the various Examinations held during the last year. Some of these, it will be observed, were used at the General Class Examinations at the end of the Session '56, '57, others for the Matriculation, and the rest for the Scholarship Examinations in last October. The adaptation of all these papers to the condition of the Students of the various years and stages of advancement will be apparent. The papers employed every year are published annually in the Calendar, and they are always entirely new, being most carefully prepared for the various Examinations by the Professors. This system of close and continuous examination, with the existence of high instruction suitable to the present requirements of pure and applied science, has produced a great and perceptible improvement in the systems pursued in the Academies of the North of Ireland, in which Students are prepared for entering this College, by producing within them a spirit of rivalry, and by elevating the general standard of education. Unfortunately, owing to a variety of circumstances, those Academies are much fewer than they ought to be, for imparting to the country at large the elements of a substantial education; and as in my Report of last year I deplored the want of a sufficient number of intermediate preparatory Schools, so, again, in common with the whole of the Collegiate authorities, I have to repeat my regret, that whilst education has become incorporated with the State, no proper provision has yet been made to encourage higher instruction between the primary Schools and any College which the tastes or objects of Students may incline them to enter. This is a most serious drawback to the spread of good education in Ireland, and the question demands the most mature consideration of your Majesty's Government.

In regard to some special departments I have to report—

1st.—That the arrangements concluded two years ago with the Directors of the Botanic Garden, in order to make it accessible to the Students of the Natural History Class, and those of some other classes, on payment to them of £50 a-year out of the additional Parliamentary Grant, continue to be highly beneficial and satisfactory, whilst affording large supplies of plants and specimens for practical demonstration in the Lecture room.

2ndly.—That the Class of Agriculture will henceforth enjoy a great practical advantage in being permitted, through the Commissioners of National Education, to visit constantly with Professor Dr. Hodges, the Model Agricultural Farm, which lies in the vicinity of the College, and which is now being brought under proper cultivation.

3rdly.—That whilst the Medical School continues to be a most important department of the College, and one that has reflected, through the success of its Students, the highest honours on its Faculty, it is still left to labour under a great and constantly felt disadvantage from the want, within the College grounds, of suitable rooms for the Medical, and more especially the Anatomical, department of the College. My own remonstrances on this vital point have been uniform and concurrent with the Collegiate authorities, from the opening of the College to the present time; and these are well expressed in the language of Dr. Carlile, the Professor of Anatomy and Physiology, who thoroughly understood the subject, and is left, with his Medical colleagues, to complain in this respect of want of success in all past applications to the Government:—"The Lectures on Anatomy and Physiology are given at Queen's College, in the vicinity of the Museum containing the preparations required for their illustration; while, from the absence at the College of any apartments whatever for the purposes of dissection and anatomical demonstration, these are carried on in a building hired for the purpose, at the distance of a mile from the College. This building is in a damp and unwholesome situation, confined in space, and otherwise very unsuitable for the purposes to which it is applied. Its distance from the College involves much loss of time to Students, in going to and fro, during the intervals of Lectures, and seriously curtails those portions which they would otherwise most profitably employ in acquiring, by dissection, sound and practical Anatomical knowledge. Frequent and urgent applications have been made to the various Governments which have been in power since the opening of the College in 1849, for means to provide suitable Anatomical apartments within the precincts of the College grounds, but hitherto without any satisfactory result."

RETURN of the Number of Medical Students in attendance in each Session.

Session.	Matriculated.	Non-matriculated.	Total.
1849–50,	28	27	55
1850–51,	20	35	55
1851–52,	25	39	64
1852–53,	29	33	62
1853–54,	29	37	66
1854–55,	39	36	75
1855–56,	33	48	81
1856–57,	36	25	61
1857–58,	35	32	67

In addition to the above, there were in attendance on the classes of Chemistry, Natural History, and Natural Philosophy, some Non-matriculated Students, as here enumerated, who did not declare the object of their attendance. About half of these, it is believed, were intended for the Medical profession.

Session.	Non-matriculated.
1852–53,	11
1853–54,	9
1854–55,	12
1855–56,	12
1856–57,	15
1857–58,	13

4thly.—I report specially, that whilst the Deans of Residences still remain unrewarded for their services, I have entered into an arrangement with them, which, without infringing on the general discipline of the College, or impeding its scientific or literary proceedings, will, I have no doubt, prove salutary, in giving effect to their desires and efforts to afford spiritual instruction and supervision to the Students of their respective denominations.

As having a most important bearing on all these points of general and particular interest, I have to notice with high satisfaction the continued existence within the College of rivalry without dissension, of competition without jealousy, and of a growing sentiment of Collegiate fellowship unmixed with any feeling of sectarian animosity. The object of the Queen's Colleges, to afford sound education to all classes and denominations, is conscientiously respected by every Professor, and steadily kept in view throughout all the proceedings of College; and the result demonstrates, not only the perfect practicability, but the great individual and public advantage of united education. I have farther, in regard to the Queen's University in Ireland, and the connexion of the Students of this College with that Body, much pleasure in referring to the numbers of Degrees and Diplomas granted this year to young men of the Queen's Colleges by the Senate, after an examination in Dublin, as extensive, strict, and impartial, as exists in any other University for similar honors, as being nearly double to those conferred in 1856, having been 68 in all. In competition for these and for University Exhibitions, the Students of the Three Colleges entered into an honourable rivalry, the result of which proves that to each of the Colleges there is attached a body of eminent Professors, who faithfully discharge their duty, and a corps of students resolved to make their merit the test of promotion, and the groundwork of personal and comparative reputation amongst themselves and their respective colleagues.

All of which is testified, on behalf of the College, by your Majesty's most faithful and devoted servant,

P. SHULDHAM HENRY, D.D., *President.*

APPENDIX.

APPENDIX, No. 1.

Queen's College, Belfast, and Queen's University.

Appendix, No. 1.

Queen's College, Belfast, and Queen's University.

The Queen's College, Belfast, is a Corporation under the name and style of "The President, Vice-President, and Professors of Queen's College, Belfast." It was founded under the provisions of the Act 8 & 9 Victoria, cap. 66, intituled "An Act to enable Her Majesty to endow new Colleges for the Advancement of Learning in Ireland." Under the powers given by this Act, it was determined to found three Colleges. Belfast, Cork, and Galway were selected as the sites of these Colleges; and on the 30th day of December, 1845, letters patent were issued, incorporating them. The Presidents and Vice-Presidents of the three Colleges were formed into a Board called, "The Board of Queen's Colleges," for the purpose of drawing up the Statutes and arranging the system of education to be pursued in them.

On the 4th of August, 1849, the Professors were appointed, and the Colleges opened for the reception of students on the 30th of October, in the same year.

Letters Patent, constituting the Statutes, were issued on the 11th of December, 1849.

The Council of the College.

The President.
The Vice-President.
The Dean of the Literary Division of the Faculty of Arts.
The Dean of the Science Division of the Faculty of Arts.
The Dean of the Faculty of Medicine.
The Dean of the Faculty of Law.

Professors.

Literary Division of the Faculty of Arts.

The Greek Language, . .	Charles MacDouall, A.M.
The Latin Language, . .	Rev. Chas. Parsons Reichel, B.D.
History and English Literature,	George Lillie Craik, A.M.
Modern Languages, . .	Mathias Joseph Frings, Ph.D.
The Celtic Languages, . .	John O'Donovan, LL.D., M.R.I.A.

Science Division of the Faculty of Arts.

Mathematics, ...	Peter Guthrie Tait, M.A., F.C.P.S.
Natural Philosophy, . .	John Stevelly, LL.D.
Chemistry, ...	Thomas Andrews, M.D., F.R.S., M.R.I.A.
Natural History, . . .	George Dickie, M.D.
Logic and Metaphysics, .	Rev. James M'Cosh, LL.D.
Mineralogy and Geology, .	Wyville Thomson, LL.D., F.R.S.E., F.G.S.
Civil Engineering, . . .	James Thompson, C.E., A.M.
Agriculture, ...	John F. Hodges, M.D., F.C.S.

Faculty of Medicine.

Anatomy and Physiology, .	Hugh Carlile, A.M., M.D., M.R.I.A.
Practice of Medicine, . .	John Creery Ferguson, A.M., M.B.
Practice of Surgery, . .	Alexander Gordon, M.D.
Materia Medica, . . .	James Seaton Reid, M.D.
Midwifery, ...	William Burden, M.D.

Faculty of Law.

English Law, ...	Echlin Molyneux, A.M.
Jurisprudence and Polit. Econ.,	T. E. Cliffe Leslie, LL.D.

Office Bearers.

Curator of Museum, . .	The Professor of Mineralogy and Geology.
Registrar, ...	Rev. Richard Oulton, A.B.
Librarian, ...	Rev. George Hill.
Bursar, ...	Alexander Dickey, Esq.

Deans of Residences.

United Church of England and Ireland, . . .	Rev. Henry Murphy, A.M.
General Assembly of the Presbyterian Church in Ireland,	Rev. Henry Cooke, D.D., LL.D.
Irish Association of Non-Subscribing Presbyterians, .	Rev. John Porter.
Wesleyan Methodists, . .	Rev. William Appelbe, LL.D.

The students of the College are either Matriculated or Non-matriculated. All the courses for matriculated students in Arts, including the Departments of Civil Engineering and Agriculture, and also in the Faculties of Medicine and of Law, will be found in the Calendar which is published annually.

Non-matriculated students, on paying the regulated class fees, and signing an engagement to observe order and discipline in the College, are permitted, without undergoing a preliminary examination, to attend any separate course or courses of lectures; but are not permitted to become candidates for Scholarships or Prizes, or to enjoy other privileges of the Matriculated students.

Students in any of the Faculties can be admitted *ad eundem* from the other Queen's Colleges, or from any University capable of granting degrees.

Collegiate Scholarships.

In the Faculty of Arts—30 Junior Scholarships, of £24 each, are awarded to Undergraduates—15 for Proficiency in Literature, and 15 for Proficiency in Science; also, 7 Senior Scholarships, of £40 each, to Graduates; also, 2 Scholarships, of £20 each, to Engineering, and 4, of £15 each, to Agricultural Students.

In the Faculty of Medicine—6 Junior Scholarships, of £20 each, and 2 Senior Scholarships, of £40 each, are awarded.

In the Faculty of Law—3 Junior Scholarships, of £20 each, and 1 Senior Scholarship, of £40, are awarded.

Scholarships awarded in the Several Faculties, 1856–57.

10 Senior Scholarships.
25 Junior Scholarships in Arts.
2 Engineering Scholarships.
2 Agricultural Scholarships.
6 Medical Scholarships.
3 Law Scholarships.
Lapsed—2 Science and 1 Literary Scholarships of third year.
" 1 Science and 1 Literary Scholarships of first year.
" 2 Agricultural Scholarships of second year.

1857–58.

9 Senior Scholarships awarded.
N.B.—Senior Scholarship Examination not yet held in Law.
27 Junior Scholarships in Arts, awarded.
2 Engineering Scholarships.
3 Agricultural Scholarships.
6 Medical Scholarships
3 Law Scholarships.
Lapsed—2 Literary Scholarships of second year's Arts.
" 1 Science Scholarship of first year's Arts.
" 1 Agricultural Scholarship of second year.

By an order of Her Majesty in Council, of 21st May, 1855, applying to the Civil Service, it is ordained that "every person nominated to a junior situation should obtain a certificate of qualification before entering on his duties." The ordinary classes in Queen's College embrace the branches required in this Examination for the Civil Service.

Special Courses have been arranged for students intending to become candidates for commissions in the Royal Artillery and Engineers, and for appointments to the Civil Service of India, both of which are now thrown open to public competition.

Queen's University in Ireland.

The charter founding the Queen's University in Ireland received the Royal sanction in the year 1850, and it provides that its Senate should have the power of conferring upon the students of the Queen's Colleges of Belfast, Cork, and Galway, such degrees and distinctions, in the Faculties of Arts, Law, and Physic, as are granted and conferred in other Colleges and Universities of Great Britain and Ireland. It further ordains that any of the students of the three Queen's Colleges, who shall have obtained such degrees in any of the several Faculties of Arts, Medicine, and Law, as shall be conferred by the Chancellor and Senate of the Queen's University shall be fully possessed of all such

Appendix, No. 1.

Queen's College, Belfast, and Queen's University.

rights, privileges, and immunities, as belong to similar degrees granted by other Universities or Colleges and shall be entitled to whatever rank and precedence is derived from similar degrees granted by other Universities.

By the charter of the Queen's University, candidates for Degrees in Medicine are required to have attended *at least one-third of the Courses of Medical Lectures* in some one of the Queen's Colleges. For the remainder of the Courses of Medical Lectures, authenticated certificates will be received from the Professors or Lecturers in Universities, Colleges, or Schools, recognised by the Senate of the Queen's University in Ireland.

The Chancellor and Senate also have the power of admitting, by special grace, Graduates of other Universities, to similar and equal degrees.

In order to obtain a degree or diploma in the Queen's University it is necessary to enter the College as a Matriculated Student, to pass the entrance or Matriculation Examination, and to pursue a fixed course of Study.

The Matriculated Students may be classified as follow:—

I.	Those intending to proceed to the		Degrees of A.B. and A.M.
II.	,,	,,	Degree of M.D.
III.	,,	,,	Diploma of Elementary Law.
IV.	,,	,,	Degrees of LL.B. and LL.D.
V.	,,	,,	Diploma of Civil Engineering
VI.	,,	,,	Diploma of Agriculture.

THE SENATE.

Chancellor.—The Right Honorable George William Frederick, Earl of Clarendon, K.G., G.C.B., &c.

Vice-Chancellor.—The Right Honorable Maziere Brady, Lord High Chancellor of Ireland, M.R.I.A., &c.

His Grace Richard, Archbishop of Dublin, D.D., M.R.I.A., &c.

The Right Honorable William, Earl of Rosse, K.ST.P., M.R.I.A., &c.

The Right Honorable Thomas Spring, Baron Monteagle of Brandon, M.A., F.R.S., Member of Senate of University of London, Comptroller of the Exchequer.

The Right Honorable Francis Blackburne, Lord Justice in Appeal, LL.D., V.C.T.C.D., M.R.I.A.

The Right Honorable David R. Pigot, Lord Chief Baron of the Exchequer, M.R.I.A., &c.

The Right Honorable Sir Thomas Wyse, K.C.B.

Sir Philip Crampton, Bart., M.D., F.R.S., M.R.I.A., Member of Senate of University of London, &c.

The Rev. P. Shuldham Henry, D.D., President Queen's College, Belfast.

Sir Robert Kane, F.R.S., M.R.I.A., &c., President Queen's College, Cork.

Edward Berwick, Esq., President Queen's College, Galway.

Richard Griffith, LL.D., M.R.I.A., Commissioner of Public Works.

Dominic J. Corrigan, M.D., M.R.I.A., Physician in Ordinary to the Queen in Ireland.

Lieut.-Colonel Thomas Askew Larcom, R.E., LL.D., F.R.S., M.R.I.A., &c.

James Gibson, Esq., A.M., M.R.I.A., Barrister-at-Law.

Robert Andrews, Esq., Q.C., LL.D.

The Right Honorable James Henry Monahan, Lord Chief Justice of the Common Pleas.

Secretary.—G. Johnston Stoney—office, Dublin Castle.

The Senate holds its sitting in Dublin Castle, where the examinations of the students of the three Colleges, for Graduation and University Exhibitions, are annually conducted by Examiners appointed by the Senate from year to year.

APPENDIX, No. 2.

Appendix, No. 2.

Return of Students attending each Class.

RETURN of the NUMBER of STUDENTS attending each CLASS in the Queen's College, Belfast, ins ach Year.

CLASS.	SESSION.								
	1849-50	'50-51	'51-52	'52-53.	'53-54.	'54-55.	'55-56.	'56-57.	'57-58.
Greek—1st year,	71	47	28	16	21	26	20	24	31
,, 2nd ,,	–	27	18	7	11	12	14	12	13
Latin—1st ,,	63	45	27	19	21	24	27	19	33
,, 2nd ,,	–	27	17	6	11	11	13	10	11
The English Language,	52	46	28	20	24	28	31	24	36
History and English Literature, Senior ,, ,,	–	–	25	15	20	16	20	19	20
Modern Languages,	62	36	41	27	34	37	29	40	40
Senior ,, ,,	–	20	28	16	15	15	19	12	16
The Celtic Languages,	*The Lectures in each Session open to the Public.*								
Mathematics—1st year,	86	58	40	25	29	33	30	35	39
,, 2nd ,,	–	12	11	11	12	11	15	17	16
Natural Philosophy—Higher Class,	–	–	–	–	–	6	6	8	7
,, ,, with Demonstrations from Geometry, &c.,	32	32	46	24	29	23	24	19	26
,, ,, Experimental,	48	59	57	29	40	34	30	37	41
,, ,, Practical Mechanics,	7	3	0	3	4	3	3	2	7
Chemistry,	37	53	63	44	51	60	50	70	60
Practical Chemistry,	6	7	14	10	15	14	12	10	11
Laboratory,	–	6	8	8	9	9	10	15	10
Zoology,	12	34	35	29	31	43	31	43	34
Botany,	12	49	40	35	37	46	30	44	34
Physical Geography,	–	–	29	17	21	19	20	21	28
Logic,	3	–	27	17	21	26	20	27	22
Metaphysics,	–	–	18	15	16	11	17	20	15
Higher Logic and Metaphysics,	–	–	6	7	7	8	6	7	9
Mineralogy and Geology,	*Public.*	6	14	13	15	13	9	20	13
Surveying,	10	9	9	6	6	9	4	15	7
Civil Engineering,	–	4	6	3	4	3	4	2	7
Theory of Agriculture,	11	8	7	2	6	5	5	4	7
Practice of Agriculture,	–	5	3	2	5	5	1	1	3
Diseases of Farm Animals,	–	5	3	2	5	5	1	1	4
Medical Jurisprudence,	2	8	14	10	13	8	10	15	16
Anatomy,	25	36	48	45	44	51	44	39	39
Practical Anatomy,	27	32	35	49	41	40	53	33	41
Practice of Medicine,	9	17	17	12	15	18	33	27	19
Practice of Surgery,	24	15	26	29	28	30	48	32	30
Materia Medica,	11	14	16	17	17	23	25	11	18
Midwifery,	14	10	12	16	17	18	24	13	7
Law of Property, Equity of Bankruptcy, Common and Criminal Law, Evidence and Pleading,	17	16	17	15	11	5	10	14	12
Jurisprudence and Political Economy, Arts,	–	–	12	2	9	6	8	2	18
Civil Law, Constitutional, Colonial, and International Law, Jurisprudence,	11	11	13	8	10	5	9	10	10

APPENDIX, No. 3.
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Fees received by Professors.

APPENDIX, No 3.

Return of the Amount of Fees received by each Professor in the Queen's College, Belfast, in each Year.

		1849-50.	1850-51.	1851-52.	1852-53.	1853-54.	1854-55.	1855-56.	1856-57.	Remarks.
		£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	£ s d	
Professor Ringwood	Greek,	84 10 0	–	–	–	–	–			In the Session 1849-50 Medical Students were required to attend the Greek and Latin Classes, but have since been exempt from attending either class
" MacDouall	"	–	65 0 0	50 0 0	37 0 0	39 5 0	46 0 0	51 15 0	44 15 0	
"	Latin,	73 15 0	–	–	–	–	–	–	–	
" Reichel,		–	70 0 0	60 10 0	31 0 0	38 5 0	44 5 0	47 15 0	39 10 0	
Craik,	English History and Literature	50 5 0	50 5 0	47 10 0	31 5 0	45 5 0	46 5 0	38 5 0	43 15 0	
Blakey	Logic and Metaphysics,	8 0 0	–	–	–	–	–	–	–	
" Dr M'Cosh,	"	–	–	*50 5 0	34 5 0	37 15 0	41 0 0	41 15 0	48 5 0	* Dr M'Cosh was appointed in Session 1851-52, and taught and received fees from Students properly belonging to the previous Session
" Wilson,	Mathematics	110 15 0	97 10 0	60 15 0	43 0 0	64 10 0	–		–	
Tait,	"	–	–	–	–	–	60 0 0	60 10 0	69 15 0	
Dr Stevelly,	Natural Philosophy,	70 0 0	70 15 0	90 10 0	47 0 0	78 15 0	75 15 0	80 10 0	83 10 0	
" Dr Andrews,	Chemistry	72 0 0	58 0 0	86 5 0	71 10 0	84 10 0	106 15 0	84 10 0	110 0 0	
"	Practical Chemistry	13 0 0	10 0 0	19 0 0	20 0 0	27 0 0	25 0 0	24 0 0	17 0 0	
" Dr Carlile,	Anatomy and Physiology,	62 10 0	80 0 0	105 15 0	100 0 0	105 0 0	121 0 0	104 10 0	86 10 0	The Professor of Anatomy pays annually to his Demonstrator a certain proportion of the fees for Practical Anatomy, which amounted to £40 in each of the Sessions 1849-50, 1850-51, 1851-52, £54 10s in 1852-53, £66 in 1854-55, and £80 in 1855-56.
" "	Practical Anatomy,	80 10 0	50 0 0	90 0 0	124 10 0	133 0 0	130 0 0	151 10 0	94 10 0	
" Dr Dickie,	Natural History and Botany,	26 10 0	49 0 0	70 15 0	50 15 0	66 0 0	76 10 0	60 10 0	50 0 0	
" Dr Frings,	Modern Languages,	67 0 0	84 0 0	83 0 0	50 0 0	81 0 0	65 0 0	74 0 0	86 0 0	
" M'Coy,	Mineralogy and Geology	–	7 10 0	24 15 0	17 11 0	29 15 0	–	–	–	
" Dr W Thomson		–	–	–	–	–	18 0 0	32 10 0	37 0 0	
" Dr Hancock,	Jurisprudence and Political Economy	26 0 0	31 0 0	35 10 0	16 16 0		–	–	–	
" Leslie,	"	–	–	–		35 0 0	14 10 0	28 5 0	22 10 0	
" Molyneux,	English Law,	33 0 0	29 0 0	37 0 0	33 0 0	20 0 0	18 0 0	21 0 0	27 0 0	
Godwin,	Civil Engineering	16 0 0	24 10 0	32 0 0	14 0 0	17 15 0	32 0 0	20 10 0	27 0 0	
" Dr Hodges,	Agriculture and Medical Jurisprudence,	15 10 0	41 0 0	40 0 0	22 0 0	40 0 0	33 15 0	21 0 0	25 10 0	No endowment for Medical Jurisprudence Dr Hodges delivers the lectures, receiving only class fees
" Dr Ferguson,	Practice of Medicine,	77 0 0	31 0 0	72 0 0	18 0 0	30 0 0	50 0 0	50 0 0	43 10 0	
" Dr Gordon,	Surgery,	41 0 0	21 10 0	58 0 0	51 0 0	43 0 0	40 0 0	74 0 0	–	
" Dr Stewart,	Materia Medica,	22 0 0	30 0 0	51 0 0	50 0 0	51 0 0	43 0 0	45 0 0	20 0 0	
" Dr Burden,	Midwifery,	80 0 0	10 0 0	52 0 0	27 0 0	31 0 0	33 0 0	44 0 0	24 0 0	
Mr Robert Hale,	Teacher of Drawing,	–	–	–	–	–	–	–	32 0 0	

Queen's College, January, 1858.

Alexander Dickey, *Bursar*

APPENDIX, No. 4.

Lectures delivered by Professors.

APPENDIX, No. 4.

RETURN of the NUMBER of LECTURES delivered by each Professor in the Queen's College, Belfast, in each YEAR.

	1849–50.	'50–51.	'51–52.	'52–53.	'53–54.	'54–55.	'55–56.	'56–57.	REMARKS.
Professor of—									
Greek,	135	232	244	246	236	240	234	235	In addition, examining about 300 exercises each session.
Latin,	162	197	218	221	189	196	232	230	Do. Do.
History and English Literature,	35	55	98	91	104	100	105	105	
Modern Languages,	208	330	324	307	306	305	319	340	
Celtic,	6	6	6	6	6	6	6	6	Open to the Public without charge.
Mathematics,	135	256	333	248	240	330	346	322	Besides two hours each week on which the Senior Scholar meets the Junior Division.
Natural Philosophy,	122	257	233	209	256	250	255	307	
Chemistry,	134	136	137	129	132	130	138	142	In addition, eight working pupils admitted each year by examination to the laboratory without charge.
Practical Chemistry,	36	36	36	36	36	36	36	36	
Natural History,	120	120	133	137	139	138	142	140	Including lectures in Physical Geography, delivered free to all students (among whom are Engineering Students, who never pay this Professor any fee); besides, practical botanical excursions.
Logic and Metaphysics,	–	–	78	142	176	175	164	177	In addition, criticising above 250 Essays in each session.
Mineralogy & Geology,	*Public.*	86	54	59	54	55	49	59	In addition, daily attendance as Curator in the Museum.
Civil Engineering,	134	138	140	136	140	136	147	118	Including practical work in Professor's office on one day in each week.
Agriculture,	172	206	205	212	209	213	218	186	Including lectures on Medical Jurisprudence and Diseases of Farm Animals, for neither of which there is any salary; in addition, practical excursions with students.
Anatomy and Physiology,	115	116	115	115	114	115	117	113	In addition, superintending the class of Practical Anatomy and Demonstrations and Dissections
Practice of Medicine,	93	93	92	92	93	94	94	85	
,, Surgery,	93	94	93	91	91	92	94	94	Besides about five lectures each session on Operative Surgery.
Materia Medica,	92	91	91	93	90	90	92	80	
Midwifery,	92	92	92	91	90	93	93	93	Besides practical instruction to students which may be required at any hour throughout the year.
English Law,	24	48	72	96	96	96	96	96	
Jurisprudence and Political Economy,	24	48	96	120	120	120	120	120	

The above Return gives the number of Meetings of one hour each, in each Class. The system of Instruction includes, not merely formal Lectures, but also examinations in the business of the course; in some classes these examinations are held daily; in others on fixed days of the week, according to the nature of the subject.

The Professors also conduct the General Scholarship Examinations; and some of them, in addition, the Matriculation and Supplemental Examinations.

APPENDIX, No. 5.

Expenditure of One Year's Additional Grant.

APPENDIX, No. 5.

ACCOUNT of the EXPENDITURE of ONE YEAR'S ADDITIONAL GRANT of £1,600, to the Queen's College, Belfast, ending 31st March, 1857.

1. Library of Ancient and Modern Literature and Philology:

	£	s.	d.
Ancient Classical Languages and Philology,	86	10	2
English History and Literature,	50	0	10
Foreign Modern Languages,	38	10	10
Works of General Interest, &c.,	144	6	9
	319	8	7

2. Libraries, Museum, &c., Mathematical, Physical, and Chemical Sciences:

	£	s.	d.
Mathematical Library,	29	12	2
Physical Library,	25	17	2
Chemical Library,	22	14	8
Museum and Cabinet of Physical Science,	74	19	4
,, Laboratory, Chemical Science,	55	0	7
	208	3	11

3. Libraries, Museum, and Collection of Objects of the Department of the Natural Sciences:

	£	s.	d.
Library of Natural History,	49	1	7
,, Geology and Mineralogy,	27	2	11
Museum of Natural History,	25	18	5
,, Geology and Mineralogy,	43	18	2
,, Materia Medica,	18	13	6½
	164	14	7

4. Libraries, Museums, and Collections of Objects of the Departments of Engineering and Agriculture:

	£	s.	d.
Library of Engineering,	22	11	4
,, Agriculture,	20	0	6
Instruments and Collections of Engineering,	42	10	3
Collections of Agriculture,	34	13	11
	119	16	0

APPENDIX, No. 5.

Expenditure of One Year's Additional Grant.

ACCOUNT of the EXPENDITURE of ONE YEAR'S ADDITIONAL GRANT, &c.—*continued.*

	£	s.	d.
5. Museum and Library of Medical Science:			
Library of Medical Works,	79	10	3
Anatomical and Pathological Museums, and Rent of Anatomical Rooms,	70	1	10
Surgical Museum,	29	16	0
Midwifery,	14	18	0
Medical Jurisprudence,	18	13	3
	212	19	4
6. Library of Metaphysical, Legal, and Economical Science:			
Law, Jurisprudence, and Political Economy,	45	6	1
Metaphysics,	34	14	6
	80	0	7

	£	s.	d.
7. Printing, Stationery, Advertising, Binding, Postage, Office Expenses, &c.,	343	4	5
8. Heating and Lighting,	133	9	4
9. Botanic Gardens, £50; Grounds, £50 0s. 4d.,	100	0	4
	1,681	17	1
Balance in Bank of Ireland Office, 31st March, 1857,	78	7	6
Total,	1,760	4	7
Amount of One Year's additional Grant,	1,600	0	0
College and Matriculation Fees,	59	5	0
Balance in Bank, 31st March, 1856,	65	3	7
Received for Calendars sold, and Fines,	5	16	0
Received repayment of Duty on Apparatus,	30	0	0
Total,	1,760	4	7

The Accounts of the College up to 31st March, 1857, have been examined, and found correct, by the Commissioners for Auditing the Public Accounts.

ALEXANDER DICKEY, *Bursar.*

APPENDIX, No. 6.

APPENDIX, No. 6.

October Examinations

OCTOBER EXAMINATIONS of Queen's College, Belfast, 1857.

Days.	Hours.	First Year Students.	Second Year Students.	Third Year Students.	Fourth Year Students.
Tuesday, Oct. 20.	9—12		Suppl. Ex. English. Mod. Lang. Math. Gen. Ex.—Law	Suppl. Ex.—Chem., Math. Gen. Ex.—Law.	Senior Schol.—Latin.
	2—5		Suppl. Ex.—Greek—Latin. Gen. Ex.—Law	Suppl. Ex.—Greek, Latin, Nat. Hist., Logic Gen. Ex.—Law	Senior Schol.—Latin
Wednesday, Oct. 21.	9—12		Gen. Ex.—Law	Sci. Schol.—Logic. Gen Ex.—Law.	Senior Schol.—Greek.
	2—5		Gen Ex.—Law Liter. Schol.—Greek.	Sci. Schol.—Metaph. Gen Ex.—Law.	Senior Schol.—Greek.
Thursday, Oct. 22.	9—12		Liter Schol.—Greek Med Engin. Schol.—Chem	Sci. Schol.—Chem.	Senior Schol.—Math.
	2—5	Matric.—Math.	Med Engin. Agric Schol.—Chem.	Sci. Schol.—Chem.	Senior Schol.—Math.
Friday, Oct. 23.	9—12	Matric.—Greek, Latin.	Liter. Medic. Schol.—Mod. Lang		Senior Schol.—Mod. Lang.
	2—5		Liter Medic. Schol.—Mod. Lang.		Senior Schol.—Mod. Lang.
Saturday, Oct. 24.	9—12	Matric.—English.	Liter. Schol.—Latin. Engin. Schol.—Surveying	Sci. Schol.—Math.	Senior Schol.—Mod. Hist.
	2—5	Matric.—English.	Liter. Schol.—Latin. Engin. Schol.—Surveying.	Sci. Schol.—Math.	Senior Schol.—Mod. Hist.
Monday, Oct. 26.	9—12		Engin. Schol.—Min. and Geo.	Sci. Schol.—Bot.	Senior Schol.—Nat. Hist.
	2—5	Lists of Matriculated Students to be made out.	Med. Schol. Agric. Schol. Botany Liter. Schol.—English. Agric. Schol.—Zool.	Sci. Med. Schol.—Zool.	Senior Schol.—Nat. Hist.
Tuesday, Oct. 27.	9—12	Science Med. Engin. Schol.—Math. Agric. Schol.—Arith.	Science Engin. Schol.—Math.		Senior Schol.—Chemis.
	2—5	Science Med. Engin. Schol.—Math.	Agric. Schol.—Nat. Phil Science Engin. Schol.—Math. Med. Schol.—Anat. and Phy.	Sci. Schol.—Nat. Phil. Liter. Schol.—Latin. Med. Schol.—Anat. and Phy.	Senior Schol.—Chemis. Med. Schol.—Pr. of Midw.
Wednesday, Oct. 28.	9—12		Agric. Schol.—Agriculture.	Liter. Schol.—Mod. Lang. Med. Schol.—Prac. Chem.	Senior Schol.—Nat. Phil. Med. Schol.—Pr. of Med.
	2—5	Liter. Med. Agric. Schol.—English.		Liter. Schol.—Mod. Lang. Med. Schol.—Physics.	Senior Schol.—Nat. Phil.
Thursday, Oct. 29.	9—12	Liter. Med. Schol.—Greek.		Liter. Schol.—Greek. Med. Schol.—Mat. Med.	Senior Schol.—Pol. Econ. Med. Schol.—Med. Juris.
	2—5	Liter. Med. Schol.—Latin.		Liter. Schol.—Latin.	Senior Schol.—Pol. Econ. Med. Schol.—Surg. Anat.
Friday, Oct. 30.	9—12	Liter Med. Schol.—Latin.			Senior Schol.—Metaph. Med. Schol.—Anatomy.
	2—5	Liter. Med. Schol.—Greek.		Liter. Schol.—Greek.	Senior Schol.—Metaph. Med. Schol.—Physiology.
Saturday, Oct. 31.	9—12				
	2—5				

Students passing the Supplementary Examinations, and General Examinations in Law, complete the previous year, and take rank accordingly.

APPENDIX, No. 6.

Hours of Lectures.

HOURS OF LECTURES, Queen's College, Belfast,—SESSIONS 1857-58.

Hours.	ARTS.			CIVIL ENGINEERING.		AGRICULTURE.		MEDICINE AND LAW.
	1st Year.	2nd Year.	3rd Year.	1st Year.	2nd Year.	1st Year.	2nd Year.	
9 till 10	*Mathematics.* Monday Tuesday Wednesday Thursday Friday			*Mathematics.* Monday Tuesday Wednesday Thursday Friday				
10 till 11	*Greek.* Tuesday Thursday Friday Saturday	*Mathematics* Monday Tuesday Wednesday Thursday Friday	*Pol Econ.* Monday Wednesday Friday	*Surv & Map* Tuesday Thursday *Min. & Geog* Monday Wednesday Friday	*Mathematics.* Monday Tuesday Wednesday Thursday Friday	*Theo of Agri* Monday Wednesday	*Surv & Map.* Tuesday Thursday *Min & Geog.* Monday Wednesday Friday	*Law of Evidence and Pleading.* Tuesday Thursday Saturday
11 till 12	*French.* Monday Wednesday Thursday	*Greek.* Monday Thursday Friday	*Metaphysics.* Tuesday Wednesday Thursday Friday		*Civil Eng.* Tuesday Thursday		*Pract Agri. & Dis F Anim* Monday Wednesday	*Com. Crim. Law.* Tuesday Thursday Saturday *Prac. Anat.* Monday Tuesday Wednesday Thursday Friday 11—4
12 till 1	*English.* Monday Tuesday Wednesday Thursday	*Latin.* Monday Tuesday Wednesday	*Nat Philos.* Monday Wednesday Friday		*Nat Philos.* Monday Wednesday Friday	*Nat Philos.* Monday Wednesday Friday		
1 till 2	*Latin.* Monday Tuesday Wednesday Thursday	*Zool and Bot* Monday Tuesday Wednesday Friday	*History, &c.* Tuesday Wednesday Thursday		*Pr Mech* Tuesday Thursday	*Zool and Bot.* Monday Tuesday Wednesday Friday		*Zoology and Botany.* Monday (for *Bot.*) Tuesday Wednesday Thursday Friday
2 till 3		*Logic.* Tuesday Wednesday Thursday Friday	*Ex Phys* Monday Wednesday Friday		*Ex. Phys.* Monday Wednesday Friday			*Anatomy and Physiology* Monday Tuesday Wednesday Thursday Friday
3 till 4		*Chemistry.* Monday Tuesday Wednesday Thursday	*Ph. Geog* Monday Wednesday	*Chemistry* Monday Tuesday Wednesday Thursday Friday	*Ph. Geog.* Monday Wednesday	*Chemistry.* Monday Tuesday Wednesday Thursday Friday		*Midwifery.* Monday Wednesday Thursday Friday *Chemistry.* Monday Tuesday Wednesday Thursday Friday *Med. Juris.* Tuesday Saturday
4 till 5		Chemical Laboratory, open from 9 A.M. till 4 P.M.		Drawing, on Mondays, from 11 A.M. till 1 P.M., and on Saturdays from 9 till 11				*French.* Tuesday Friday *Pr of Med.* Monday Tuesday Wednesday Thursday *Mat Med.* Friday Saturday
5 till 6	*German.* Monday Thursday			Engineer Office, on Saturdays, from 11 till 4.				*Surgery* Wednesday Thursday Friday Saturday *Materia Medica* Monday Tuesday
6 till 7	*French.* Monday Thursday							*French.* Monday Thursday *Law of Prop* Monday Wednesday Friday *Civil Law.* Monday Wednesday Friday
7 till 8			*Jurisprud.* Monday Wednesday Friday					*Jurisprudence.* Monday Wednesday Friday
8½ till 9½								*Equity & Bank.* Monday Wednesday Friday *Cons & Col Law.* Monday Wednesday Friday

General Class Examinations

GENERAL CLASS EXAMINATIONS, Queen's College, Belfast.

	SESSION 1856-57.			SESSION 1857-58.			A.M.	P.M.
The English Language,	Saturday,	January	10	Saturday,	January	9	—	12—4
Physical Geography,	Thursday,	January	15	Thursday,	January	14	9—12	—
Logic,	Saturday,	February	21	Saturday,	February	20	9—12	—
Zoology,	Friday,	March	6	Friday,	March	5	9—12	—
Mineralogy and Geology,	Friday,	March	27	Friday,	March	26	—	2—5
Metaphysics,	Tuesday,	April	7	Tuesday,	March	30	9—12	and 2—5
History and English Literature,	Thursday,	April	9	Thursday,	April	1	9—12	,, 2—5
Midwifery,	Monday,	April	27	Monday,	April	26	9—12	—
Practice of Medicine,	Monday,	April	27	Monday,	April	26	—	2—5
Anatomy and Physiology,	Tuesday,	April	28	Tuesday,	April	27	9—12	and 2—5
Practical Anatomy,	Wednesday,	April	29	Wednesday,	April	28	9—12	—
Practice of Surgery,	Wednesday,	April	29	Wednesday,	April	28	—	2—5
Materia Medica,	Thursday,	April	30	Thursday,	April	29	9—12	—
Medical Jurisprudence,	Thursday,	April	30	Thursday,	April	29	—	2—5
Practical Chemistry,	Friday,	May	1	Friday,	April	30	9—12	—
Greek (First Year),	Friday,	June	5	Friday,	June	4	9—12	and 2—5
,, (Second Year),	Saturday,	June	6	Saturday,	June	5	9—12	,, 2—5
Latin (First Year),	Saturday,	June	6	Saturday,	June	5	9—12	,, 2—5
,, (Second Year),	Friday,	June	5	Friday,	June	4	9—12	,, 2—5
Natural Philosophy,	Saturday,	June	6	Saturday,	June	5	9—12	,, 2—5
Surveying,	Saturday,	June	6	Saturday,	June	5	9—12	—
Mathematics (First Year),	Monday,	June	8	Monday,	June	7	9—12	and 2—5
,, (Second Year),	Monday,	June	8	Monday,	June	7	9—12	,, 2—5
,, ,,	Tuesday,	June	9	Tuesday,	June	8	9—12	—
Modern Languages,	Tuesday,	June	9	Tuesday,	June	8	9—12	and 2—5
Chemistry,	Wednesday,	June	10	Wednesday,	June	9	9—12	,, 2—5
Botany,	Thursday,	June	11	Thursday,	June	10	9—12	—
Civil Engineering,	Thursday,	June	11	Thursday,	June	10	9—12	—
Practice of Agriculture,	Thursday,	June	11	Thursday,	June	10	9—12	—
Diseases of Farm Animals,	Thursday,	June	11	Thursday,	June	10	9—12	—
Theory of Agriculture,	Thursday,	June	11	Thursday,	June	10	—	2—5

General Examination of Students in Law, and also of Students in the Faculty of Arts, in Jurisprudence, and Political Economy, at the close of the Lectures on these subjects.

APPENDIX, No. 7.

APPENDIX. No. 7.

Digest of Subjects and Courses.

AN ENLARGED DIGEST of SUBJECTS and COURSES pursued in Queen's College, Belfast.

GREEK.

Professor, Charles MacDouall, A.M.

In the Greek Class, as in all those which are attended during two sessions, the business, as well as the hours assigned to the Students of the different years, is necessarily different; but it is always distributed into three simultaneous processes, viz., public examinations, lectures more or less formal, and exercises written at home and commented on in the class.

In the first session, the complex and self-contained structure of the Greek Language is subjected to a close analysis; carried out, on the one hand, by tracing words to their crude forms, by classifying terminations, both the primary and the flexional, and by discriminating among analogically correct forms those actually used in different ages and dialects; on the other hand, by exhibiting the methods by which words are combined in simple clauses, clauses are knit into sentences, and sentences compose periods less or more complicated. Some prose-work furnishes the materials for this analysis; while the Students read and translate it, or, as often, re-translate off-hand portions of it when read out in English before them by the Professor. Besides syntactical phænomena, the laws and characteristics of both epic and dramatic versification are expounded and exemplified, in commenting upon a book of the *Ilias* and upon some tragedy.

In the second session, while consecutive portions of Herodotus along with some Attic oration or philosophical treatise and a book of the *Odyssey* along with some Attic tragedy or comedy form the basis of prelections, the previous discipline is continued and extended; the distinctions of dialect and style are more fully elucidated; the origin, growth, and fortunes of the epos, the drama, history, and other departments of literature, are more distinctly unfolded; discussions on points of mythology, geography, chronology, archæology, æsthetics, &c., are more freely introduced and more amply treated. The Students are required to turn Herodotean Greek, at sight, into Attic, altering both the forms of words and the structure of sentences; to re-translate passages into Greek prose and verse; and also to give in original essays in both forms of composition.

Considering the variety of subjects which enter simultaneously into the Collegiate Course, the Students generally appear to give a fair share of their attention to the business of the Greek Class. Several times in the week a considerable number attend extra lectures, at which no note is taken of their presence or of their absence.

Hitherto the unfurnished state of this College, in respect to plans, coins, sculptures, engravings, models, and similar subsidiaries to the study of the Classics and of Archæology, has seriously impeded and discouraged the efforts of both teachers and taught within its walls; but a sum has been now appropriated for founding a department in the Museum for objects of art and antiquity, from which very desirable results may be confidently anticipated.

LATIN.

Professor, Charles Parsons Reichel, B.D.

The course read in the Latin Classes, during the Sessions 1854–55, 1855–56, 1856–57, 1857–58, is as follows:—

Session 1854–55.

Senior Class.—Cicero Actiones Verrinæ, Cicero de Finibus, Cicero de Oratore; Lucretius.

Junior Class.—Tacitus' Agricola, Tacitus' Histories; Juvenal; Cicero, Tusculan Questions; Horace, Epistles.

Session 1855–56.

Senior Class.—Tacitus' Annals; Cicero de Finibus; Horace, Epistles.

Junior Class—Tacitus' Agricola, Tacitus' Histories; Cicero pro Caecina, Cicero Tusculan Questions; Juvenal.

Session 1856–57.

Senior Class.—Tacitus' Annals; Plautus' Captivi; Horace, Epistles; Lucretius, B. II.

Junior Class.—Cicero de Natura Deorum; Cicero de Finibus: Juvenal.

Session 1857–58.

Senior Class.—Cicero Actiones Verrinæ; Lucretius, B. 3; Horace, Epistles.

Junior Class.—Agricola; Livy, B. 22; Virgil, Georgics.

The Junior Class is that composed of Students of the *First Year*; the Senior that composed of Students of the *Second Year*.

The Professor, therefore, has each set of Students only two years, at most, under his care; no attendance on Lectures in Latin or Greek being required of Students in their Third Year.

The Professor requires the Class to prepare for each Lecture a certain portion of the authors in course of being read. If any Student is found to have neglected doing this, without his being able to assign a satisfactory reason for doing so, his name is struck off the roll of attendance for that day. The Professor sometimes translates to the Class himself, sometimes requires them to translate aloud, making such corrections and observations as may be necessary fully to explain the passage, and to throw light on the idiom of the author, and the structure and analogy of the language.

Besides this, full statements of the historical and legal points involved in the authors read, are furnished by him.

Exercises in Latin Prose Composition are also given by him from time to time.

The Professor has before expressed his deep regret that this College possesses none of those subsidiaries which are almost essential to the study of Classic Literature; there being not a single map, plan, coin, or cast of coin, &c., to which he might refer in elucidation of the subject; and that the classical part of the Library is most inadequately supplied. These defects are now, however, in course of being remedied.

HISTORY AND ENGLISH LITERATURE.

Professor, George Lillie Craik, A.M.

Professorship of History and English Literature, 1853–54.

The Professor of History and English Literature has two Classes: one entitled the Class of the English Language, which is taught for one term, and is attended, according to the Curriculum for Degrees in Arts, by Students of the First Year; the other entitled the Class of History and of English Literature, which is taught for two terms, and is attended by Students of the Third Year.

It is important to observe, that by this arrangement there is added to the two distinct subjects, which are combined in the designation of the chair, a third subject perfectly distinct from either; each of the three, at the same time, like every other great department of human knowledge and speculation, having several subdivisions.

I. The Class of the English Language is taught by means of—

1. A Course of Lectures on the origin, history, and constitution of the language, and on the principles of Universal Grammar.
2. Examinations on a printed text book, prepared by the Professor, entitled, "Outlines of the History of the English Language."
3. Exercises in Composition, both in prose and verse; and
4. A Course of Critical Readings, directed more especially to the philology of the language, both in its principles and in its details. For this last branch it has been found necessary to have

APPENDIX, No. 7.

Digest of Subjects and Courses.

a number of voluntary meetings during the Second Term, which, however, have been attended, hitherto, with scarcely an exception, by every member of the Class. And now, the portion of the prelections which accompanied the Critical Readings being about to be published, that part of the Course will for the future be omitted, and the time which it occupied otherwise employed.

The business of the Class, thus conducted, may be stated to comprehend the subjects of Universal Grammar, or the Philosophy of Language generally, with the Elements of Comparative Grammar and of Linguistic Ethnology, the Philology of the English Language, and the Practice of English Composition.

The principal works recommended to the attention of the Students are, the "Proceedings of the Philological Society;" Guest's "History of English Rhythms;" Taylor's Edition of Horne Tooke's "Diversions of Purley;" Professor Key's "Alphabet;" Thomson's "German-English Analogies;" Dr. Latham's "English Language;" Trench's "Study of Words;" and the "English Synonymes," edited by Archbishop Whately, together with the leading Dictionaries and Grammars.

II. In the Class of History and of English Literature, the teaching of History has hitherto embraced the Outlines of Historical Geography; the Elements of Chronology; a sketch of the General History of the World; a Course of Lectures on the Science of Historical Investigation; and a minute survey, by way of illustration, of various portions of the history of England, including the progress of the constitution and of society, as well as the course of public events and transactions, with special reference to the original authorities (in so far as was practicable in our lamentable destitution here of books of all kinds), and to the bibliography of the subject. No text-book has been used, but examinations are regularly held, the Students being left to collect the facts necessary to be remembered from the Lectures, and from any of the common histories. The books recommended and referred to are far too numerous to be mentioned here.

The subject of English Literature is treated both historically, and in reference to the principles of æsthetic and critical science. For the history of our literature, a work of the Professor's, entitled "Sketches of the History of Literature and Learning in England," is employed as a text-book. On the subject of Literature, as one of the forms of the Artistic, a Course of Lectures is delivered. There are regular examinations both on the text-book and on the Lectures; and weekly essays or other exercises in writing, are exacted throughout this part of the Course.

MODERN LANGUAGES

Professor, Mathias Joseph Frings, PH.D.

The foreign Modern Languages taught up to the present day are French and German. The Students generally select the former for their College Course; one-fourth of the Class, on an average, however, take up both languages; few take German alone.

The mechanism and peculiarities of the respective languages are carefully illustrated by the Professor, who is unremittingly endeavouring to enable the Students to think in that language which they are pursuing. To effect this, the Students are made to translate more frequently from their mother tongue into the one to be acquired than *vice versa*, and orally return, without delay, in French or German, any sentence that may be proposed in English.

The Professor also occasionally delivers a Lecture on the History of French or German Literature, or Language. On all these topics the Students are frequently examined.

The books recommended are, plays from Göthe and Schiller; from Corneille, Racine, and Molière; also historical writings in both languages. Some one of these books is critically read aloud once a week, by the Students, and turned by them into English.

The result of these proceedings, considering the very short time allowed, has generally proved satisfactory. At the end of the Session the Students who, almost all, began, as it were, with A, B, C, were able to translate tolerably well an easy French or German author, and also generally made a good attempt at turning the English into the Modern Language. They were also pretty well acquainted with the leading features of the history of that language which they have been pursuing, and satisfactorily answered the principal questions of its grammar.

The Students attending to the Modern Languages during one Session only, and beginning, so to say, at the very foot of the hill, have, unfortunately, no time left to enter the field for Comparative Grammar.

Also, two Courses for Senior Students who are required to attend a more extended Course for the Degree of A.M., are delivered in German and French.

There is an Evening Course for Medical Students who are not able to attend the Course for the Students of Arts.

CELTIC LANGUAGES.

Professor, John O'Donovan, M.R.I.A.

The Professor delivers a series of Lectures in each Session on the Irish Language. These Lectures are open to the public.

MATHEMATICS.

Professor, Peter Guthrie Tait, M.A., F.C.P.S.

Attendance on this Class is prescribed to all Students in the Faculty of Arts during the first year of their Course; during the second year they are required to attend either a higher Course of Mathematics, or of Latin and Greek.

All Students in the Department of Engineering are required to attend the Mathematical Classes during two years.

Before entering, Students are required to pass an examination in the First and Second Books of Euclid, and in a small portion of Algebra. Practically they are generally well prepared in the prescribed portions of Euclid, while, on the contrary, it has been necessary, with a large portion of the Class, to commence the instruction in Algebra from the very beginning. A considerable number of the Students are Candidates for Mathematical Scholarships at entrance, and these are generally well prepared in the first six Books of Euclid, and a considerable portion of Algebra and Plane Trigonometry.

On this account the instruction of the First Year in Mathematics has been given in two Divisions. The Lower Division has been carefully taken through such portions of Euclid, I., II., III., IV., VI., as they had not previously prepared, and has received instructions in Algebra as far as the progressions, and in Plane Trigonometry as far as the solution of triangles, with the use of logarithms and trigonometrical tables. The instruction of the Upper Division comprises a complete Course of Algebra and Trigonometry, with the principal historical properties of the Conic Sections, treated geometrically.

The Council has sanctioned the employment of the Senior Mathematical Scholar in giving a portion of the instruction of the Lower Division. This arrangement, while it affords a greater number of hours to the Lower Division, enables the Professor of Mathematics to give more attention to the Upper Division, and has been found to work very satisfactorily.

In the Second Year the subjects of Lecture are Analytical Geometry, the Differential and Integral Calculus, and the first three Sections of the Principia of Newton; and, in addition to this, when the progress of the Students has been sufficiently rapid during the early part of the Session, the solution of the simpler kinds of Differential Equations, and the principles of Analytical Geometry of Three Dimensions. Spherical Trigonometry and the Theory of Equations are not included in the subjects of Lecture, but are required from the Candidates for Science Scholarships of the Third Year.

The instruction is carried on in great part by questions, which the Students are required to work out at the time, under the eye of the Professor, the questions having reference to those portions of the subject which have just been treated in the Lectures. The Professor then corrects their work, and gives such hints and explanations as are requisite.

THE PHYSICAL CLASSES.

Professor, John Stevelly, LL D.

The subjects taught in the Physical Classes are distributed under three subdivisions:—Natural Philosophy, Experimental Physics, and Practical Mechanics.

The subjects comprised in the Course of Natural Philosophy are—Mechanics (under its several statical and dynamical subdivisions), Hydrostatics, Hydraulics, Pneumatics, Acoustics, Optics, and Astronomy. The Students who attend this class are the Matriculated Students who are seeking a Degree in Arts, the Engineering Students of the Second Year, and Non-Matriculated Students, some of whom are Candidates for the ministry in the Presbyterian Churches. Attendance at the Lectures three days in each week, during the three Terms, is imperative on all those Students, and one hour in each week is employed in asking questions from prescribed parts of Galbraith and Haughton's Manual. Two days in the week attendance is optional. In the Lectures, attendance on which is imperative, such mathematical proofs and illustrations only are introduced as a person reasonably prepared in the six first books of Euclid and Elementary Algebra might easily comprehend. The teaching is by prælection; and although no text-books are prescribed, the ordinary elementary works on the several subjects are pointed out and referred to. At the Lectures, attendance on which is voluntary, the demonstrations and investigations are pursued in a more systematic and mathematical method, so as to require a knowledge of Analytic Geometry, Conic Sections, and the Differential and Integral Calculus. Text-books are used for the guidance of the Students attending these Lectures, who are chiefly those who are intending to compete for Honors. These text-books are Earnshaw's and Todhunter's Statics, Wilson's Dynamics, Tait's Dynamics of a Particle, Miller's Hydrostatics, Lloyd's Optics and lectures on the wave theory of light, Herschel's Astronomy, and two of Airy's Tracts, with occasional reference to Du Hamel's Cours de Mecanique, and to Poisson's Works.

The Class of Experimental Physics is attended by the same Students, and also by Agricultural Students of the First Year, and by Medical Students of the Third Year. The subjects of these Lectures are taught entirely without mathematical demonstration, by the aid of experiments, illustrations, drawings, and models, and such works as Lardner's Hand-book, Golding's Bird's Physics, Webster's Physics, Miller's Chemistry, Vol. I., Arnott's Elements, Biot, Pouillet, Peschel, and such like standard works are referred to, and recommended to the attention of the Students. The subjects of Heat, Electricity, and Electro-Magnetism are at present chiefly taught in the Chemical Class; but the leading facts and principles are taught by selections from Biot, Pouillet, Ganot, and Miller.

The Practical Mechanical Class is attended by Students in Engineering of the Second Year. The Lectures and instructions are given twice in the week. The subjects embraced are the nature and estimate of work done; the kinds of work required to be done; the nature and laws of friction, and other useless resistances; the moving powers at our command, their respective nature and the laws which govern their action; the manner in which they are, by machinery, connected with and opposed to the resistances; the construction of machines; the principles of strength of materials as opposed to strains; the equilibrium of structures, frames, roofs, arches, domes; the general principles of mechanism; general maxims in the structure and working of machines; maximum effects of machines; hydraulic engines; the steam engine. The works used as guides to the studies of the Students in this Class are selections from Lloyd's and Robinson's Mechanics, Willis's Principles of Mechanism, Barlow on Materials and Construction, Hodgkinson's Experimental Researches, Tredgold, Tate's Elementary Treatises and Exercises, and selected numbers of Weale's Rudimentary Series.

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CHEMISTRY.

Professor, Thomas Andrews, M.D., F.R.S., M.R.I.A.

In the Class of Chemistry the greater part of the Course is devoted to pure Chemistry; but the Elements of the Sciences of Heat and Electricity, particularly in their relations with Chemistry Proper, are also taught. The application of these sciences to the arts are particularly referred to; and it has been the constant endeavour of the Professor to communicate to the Students as precise and accurate information as possible on the subjects treated in his Lectures, and to train them to habits of careful observation and accurate thinking. With this view a weekly examination of the whole Class is held, at which the Students are subjected to a searching examination on the business of the preceding week; and further to encourage a taste for scientific inquiry, and also to train a certain number of practical chemists, a limited number of the best Students are admitted, by examination, as working pupils into the chemical laboratory, where they have an opportunity of acquiring a knowledge of chemical analysis. This latter arrangement has now been in practice for four years, and has already been attended with the best results.

NATURAL HISTORY.

Professor, George Dickie, M.D.

The Zoological Department of the Course occupies the First Term and greater part of the Second, and comprehends the Outlines of Anatomy and Physiology of animals, followed by Systematic Zoology, and remarks on the distribution of animals.

The Botanical part comprehends Vegetable Anatomy and Physiology, Systematic Botany, and distribution of vegetable forms. In addition to the Class Lectures (four days for Arts and five for Medical Students), meetings are held in the Botanic Garden, and practical excursions made into the neighbouring country.

The subject of Physical Geography is supplemental to the above Courses, and is delivered to Arts Students of the Third Year, during the First Term of the Session.

This Course comprehends chiefly Lectures on the structure and form of continents and islands; the distribution of mountain systems, rivers, and lakes; the ocean, its currents, temperature, &c.; the atmosphere, its currents, &c.; rain, snow, &c. The preceding subjects are considered in relation to the geographical distribution of animals and plants.

These different branches are illustrated by specimens, or drawings, or both, as the case may be.

LOGIC AND METAPHYSICS.

Professor, Rev. James M'Cosh, LL.D.

Students attend this Class four days each week during twelve weeks of the Second Session. On two of these days there are examinations on a text-book of Formal Logic, with short prelections on the said text-book, and also the oral explanation of philosophic terms, the reading of Essays by the Students, and the criticism of them by the Professor. On the other two days the Professor delivers written Lectures. This Course of Lectures is divided into two parts: FIRST, GENERAL LOGIC, or an Exposition of the Laws of Thought in general, that is, whatever be the object of thought, embracing Notions, Judgment, and Reasoning: SECONDLY, PARTICULAR LOGIC, or the Development

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of the Laws of Thought, as directed to particular classes of objects, comprising Demonstrative Evidence, Probable Evidence, Induction, Analogy, Teleology, and the Relation of the Oraganon of Bacon to that of Aristotle. The prominent topic in the second part is the Method of Induction, which is treated under the heads:—I. The Means, being generally Systematic Observation, and more particularly Analysis, Observation Proper, Experiment, Hypothesis, Explication of the Conception. II. The End, being the Discovery of Classes (as in Natural History, &c.), or Causes (as in Natural Philosophy, &c.). III. The Canons of Classes and Causes by which we may reach the End by the Means. The Students are required to give in a short written essay once a fortnight. At the Pass Examination, at the close, about one-half of the questions bear upon subjects discussed in the text-book, and the other half upon topics explained in the lectures.

METAPHYSICS.

This Class meets four days each week, and an hour each day, during the first two terms of the session, and is attended by Students of the third year. On one of these days there is a rigid examination, with interspersed remarks by the Professor, on the second half of the Epitome of the History of Philosophy, sanctioned by the University of France (translated by Henry). In this part of the text-book there is an abstract of the doctrines of the more eminent philosophers who have flourished in this country, and on the Continent of Europe, from the time of Bacon to the present day. On another of these days there is an examination on the written lectures, together with the reading and criticism of essays; the students being required to give in a carefully written essay every fortnight to the Professor, who reads it at home, and selects certain portions of it to be read in the class, where he criticises it. These essays are on the leading subjects discussed in the written lectures. On the other two days the Professor delivers carefully prepared written lectures. He begins the course with a few lectures on the Method of Investigation, which is that of Induction, and on Mind and Body, and then proceeds to divide his course into two parts, PSYCHOLOGY and METAPHYSICS PROPER.

Under PSYCHOLOGY he treats (1) of the Powers or Faculties of the Mind, and (2) of the Laws of the Succession of Thought. He classifies the faculties as follows:—I. The Simple Cognitive Faculties: (*a*) Perception; (*b*) Consciousness. II. The Reproductive Faculties: (*a*) Memory; (*b*) Imagination; (*c*) Symbolic Power. III. The Faculties which Discover Relations: (*a*) of Identity and Difference; (*b*) of Whole and Parts (to which we owe abstractions); (*c*) of Resemblance in respect of such qualities as (1) of space, (2) of Time, (3) of Quantity, (4) Active Property (to these we owe the Discovery of Classes), and (*d*) of Cause and Effect. IV. The Conscience. V. The Emotions; and VI. The Will. In this course of lectures, which occupies two-thirds of the session, the method of operation, and peculiarities of these mental attributes, are carefully pointed out.

Under METAPHYSICS PROPER the Professor treats of the Native or Constitutional Principles which are in the Mind prior to Experience. He points out their true Psychological Nature, and shows that they are the fundamental laws or rules of the Faculties. He also specifies the tests, such as Self-evidence, Necessity, and Universality, by which they may be distinguished. He proves that they are in the constitution of the mind, and that they operate spontaneously, but that we can make a reflective or philosophic use of them only after we have detected their nature by a careful induction. He classifies them as the True, the Lovely, and the Morally Good. Under the first he treats (1) of Primitive Cognitions and Beliefs, such as Body, Spirit, Substance, Space, Time, Dynamic Power, the Infinite; and (2) Primitive Judgment, such as Substance and Quality, Mathematical Axioms, Cause and Effect. Under the Lovely, he treats of that which calls forth emotion, and discusses very briefly the nature of Beauty. Under the Good, without entering into the subject of Ethics, he shows that there is a fundamental distinction between Moral Good and Evil. He closes this course by showing how all these principles should conduct us to the belief in a Being who is at one and the same time the True, the Lovely, and the Good.

Higher Class of Logic and Metaphysics.

This class is a small one, consisting only of about nine young men, who have been under the Professor the two previous sessions, most of whom have taken the Degree of B.A., and some of whom are preparing for Competitive Examinations. It meets two hours each week, during the first and second terms of the session. A considerably large course of reading is prescribed to the Student, on which he is examined by the Professor, who intersperses prelections of his own. Last session the Students went over, in Logic, Thomson's Outlines of the Laws of Thought, and portions of Mansell's Prolegomena, of Whewell's Philosophy of the Inductive Sciences, and of Mill's Logic; and in Metaphysics, the Philosophy of Ancient Greece, embracing portions of Butler's History and of Aristotle's Ethics; and also certain topics discussed in Kant's Critick of Pure Reason, and in Hamilton's Notes and Discussions. For several years the Professor delivered a Course of Lectures on the Correspondence between the Order of External Nature and the Laws of the Mind—this has since been published. This year he is lecturing on the Laws of Thought, and on the Intuitive Convictions of the Mind inductively investigated.

GEOLOGY AND MINERALOGY.

Professor, Wyrille Thomson, LL.D.

The Courses consist of lectures, demonstrations, and examinations. The Geological Course embraces the general principles of the science, and a detailed investigation of the palæontological, lithological, and economic characters of all the formations. The Students are exercised in the practical use of the necessary instruments, and in the construction of Geological maps and working sections. The characteristic fossils of the different formations are rendered familiar by the exhibition of such specimens as the funds allow of, and an excellent series of drawings. Drawings are also used for the illustration of the underground workings of mines of copper, coal, &c.

In the Mineralogical Course the Students are instructed in the most modern crystallography by models, and exercised with the reflecting goniometer. The electro-chemical classification of minerals is then explained, and an extensive suite of minerals in the museum is arranged on that system, for the instruction of the Students. The Professor is now adding the crystallographic and chemical formulæ to every species in the cases, so as to increase the educational value of the collection to the utmost.

Once a week examinations are held, and additional explanations given of the subjects of the preceding lectures.

CIVIL ENGINEERING.

Professor, James Thomson, A.M., C.E.

The Course of instruction imparted to Students in this Class includes the principles and practice of Surveying and Practical Geodesy, together with the principles and practice of levelling and making sections, mapping, and drawing. This Course is confined to Students of the First year. Those of the Second year are instructed in the general branches of Civil Engineering, including engineering and general architecture, the formation of railways, roads, bridges; the strength and properties of material, and every other branch of general construction; hydraulic engineering, including water-power, and all works connected with hydraulics; the principles of construction of the steam-engine, with the nature and properties of steam as a moving power; practical mechanics, and engineering finance.

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AGRICULTURE.

Professor, John Frederick Hodges, M.D., F.C.S.

Theory of Agriculture.

The objects of this Course are to teach the principles of Agricultural Science. It includes an account of the origin and composition of soils, the structure and food of plants, and the composition and preparation of manures.

Practice of Agriculture.

The objects of this Course are to teach the young agriculturist how practice may be conducted in accordance with the principles of science, and the results of experience, and to describe the methods by which the largest amount of food may be profitably obtained from the soils of this country. It includes an account of the processes employed in the preparation of the soil for crops, draining, irrigation, &c., the history of the plants of the farm, and the economy of farm produce.

History and Diseases of Farm Animals.

In this Course the history, structure, and treatment of the animals of the farm, in health and disease, are described, and the relative value and economical preparation of the various substances used in feeding explained.

All the Lectures in these Courses require an extensive series of illustrations, and efforts have been made to obtain suitable collections of apparatus, models, &c., a most valuable collection of drawings has been provided for the demonstration of the structure and forms of animals, and numerous specimens of seeds, &c., have been presented to the College. As the history of the treatment and technical management of the flax plant, which affords the raw material of the staple manufacture of Ireland, is regarded as an important department of the duties of an Agricultural Professor in Ulster, the chief seat of the flax industry, a complete series of flax implements and specimens has been placed in the museum.

The Students are examined frequently during the Session, and required to write abstracts of the lectures. By these means their attention is secured, and their progress ascertained. Excursions are also made to implement and manure manufactories, and they attend the monthly meetings of the Chemico-Agricultural Society of Ulster, which are held in Belfast.

The influence which the young men thus trained must, in future years, exercise on the agriculture of Ireland, may be expected to produce the most beneficial results.

ANATOMY AND PHYSIOLOGY.

Professor, Hugh Carlile, A.M., M.D., M.R.I.A.

The Department of Anatomy and Physiology comprises the Lectures on Anatomy and Physiology, and Practical Anatomy. The Lectures on Anatomy and Physiology consist in the exhibition of carefully dissected portions of the recent human body and of the bodies of other animals, and of anatomical preparations of the more delicate structures, preserved in spirits of wine, and by various other means, and in the description of the forms, relations, and intimate structure of all the organs of the body, and the explanation of the functions of every part. Comparative Anatomy is largely used for the purpose of illustrating analogous structures and functions in man, and morbid preparations are employed in order to exhibit the changes of organization induced by disease. Enlarged copies of microscopic drawings are also much employed in these Lectures, as affording the best means of conveying to a large number of individuals, at the same time, a correct knowledge of minute anatomical structure, and from time to time, a series of very fine preparations of the minute structure of the various organs, is exhibited to the members of the class by means of microscopes. These Lectures are given on the first five days of the week, and examinations of the Lecture Class are frequently held, and the answering recorded.

Practical Anatomy is understood to comprehend dissection of the dead body, and anatomical demonstrations. The dissections are carried on under the superintendence of the Professor of Anatomy and Physiology and the Demonstrator of Anatomy, during the whole week, at all convenient hours not occupied by Lectures or Demonstrations. Each Student is required to dissect during the Session, at least one-half of a subject, so that every portion of the body, the right and left sides being upon the whole, symmetrical, shall come under his observation. The bodies are so prepared, by a preserving process, that decomposition is arrested for a time sufficient to admit of the complete dissection of the several parts; and, since the opening of this College, no serious case has occurred of any of those diseases which the dissection of unpreserved subjects so frequently produces.

The anatomical demonstrations form a course of instruction of a more elementary nature than the Lectures on Anatomy and Physiology. They deal more with the forms and positions of parts, in reference to their anatomical and surgical relations, than with their intimate structure, functions, or homologies; and they are confined more strictly to the human subject in its healthy or normal condition, Comparative Anatomy and Pathology not forming any considerable part of the Course. They are given on the first five days of the week, and are interspersed with frequent examinations.

The Lectures on Anatomy and Physiology are given at Queen's College, in the vicinity of the museum containing the preparations required for their illustration; while, from the absence at the College of any apartments whatever for the purposes of dissection and anatomical demonstration, these are carried on in a building hired for the purpose, at the distance of a mile from the College. This building is in a damp and unwholesome situation, confined in space, and otherwise very unsuitable for the purposes to which it is applied. Its distance from the College involves much loss of time to Students, in going to and fro, during the intervals of Lectures, and seriously curtails those portions which they would otherwise most profitably employ in acquiring, by dissection, sound and practical anatomical knowledge. There can be no doubt, that the inconvenience thus sustained by the Students, tends to diminish the number attending the medical department of the College. Frequent and urgent applications have been made to the various Governments which have been in power since the opening of the College in 1849, for means to provide suitable anatomical apartments within the precincts of the College grounds, but hitherto without any satisfactory result.

PRACTICE OF MEDICINE.

Professor, John Creery Ferguson, M.A., M.B.,

Hony. Fellow King and Queen's Coll. Phys. &c.

The Class meets four times each week, from the first week of November to the last of the following April.

An examination is held usually once a fortnight. The Course embraces the principles of Inflammation, Fevers, the diseases, organic and functional, of the viscera of the three great cavities of the human body. In treating of individual diseases, their pathology, semeiology, ætiology, and treatment, are the subjects chiefly dwelt on. Wherever it is possible, pathology is illustrated by the preparations afforded by our museum, by drawings and plates, or by recent specimens. It may be added, that the Professor's present connexion with the Belfast General Hospital adds greatly to the means of making his Course more useful and interesting to Students.

THEORY AND PRACTICE OF SURGERY.

Professor, Alexander Gordon, M.D.

Four Lectures are delivered weekly during the Medical Session. An examination is held each day on

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the subject of the preceding day's Lecture. Each Course comprises the following subjects:—

Inflammation,
Suppuration,
Mortification,
Erysipelas,
Burns,
Ulcers,
Wounds,
Hæmorrhage,
Diseases of the Arteries,
" Veins,
Fractures of Trunk and Extremities,
" Cranium, Injuries of the Brain and Scalp,
Dislocations,
Diseases of the Joints,

Diseases of the Bursae,
" Bone, benign and malignant,
" the Jaws and Mouth,
" the Fingers and Toes,
" Female Breast,
" Anus and Rectum,
" Testis,
" Hernia,
" Prostate,
" Bladder,
" Eyes,
" Larynx,
Syphilis,
Gonorrhœa,
Stricture,

All the capital and minor operations are performed on the dead subject by the Students, under the superintendence of the Professor. A Dissecting Room in the College would be highly advantageous to the Surgical Student, as the Professor would be thereby enabled to make the Course of Operative Surgery more extensive, and it would afford additional facilities for instruction in Surgical Anatomy.

MATERIA MEDICA.

Professor, James Seaton Reid, M.D.

This Course includes—

1st. General Pharmacology, or the modes in which medicines act upon the living organism in a state of health.

2nd. Therapeutics, or the modes in which medicines act as curative agents.

3rd. Pharmacy.

4th. Dietics—a review of the different kinds of food used in health and in disease.

5th. Special Pharmacology, or the history, composition, uses, and modes of administering medicinal agents for the cure of disease.

The Class meets four times each week. An examination is held once every week.

MIDWIFERY.

Professor, William Burden, M.D.

Lectures four times a week, during the six winter months, consist of following subjects:—

Anatomy of the pelvis, so much as is required for midwifery. Its measurement and pelvimeters.

Contents of the pelvis. The functions of the uterus in its virgin state.

Conception—length of gestation—changes of the uterus and its appendages during gestation.

Growth of child from its earliest seen form until its full parasitic size.

Graafian vesicle and corpus luteum. Fœtus, its circulation, signs of maturity, weight, and length.

Plural births.

Proportion of births and deaths of males to females.

Superfœtation.

Signs of pregnancy.

Signs of approaching labour.

Natural labour, its progress, also the positions and progress of child till its separation from its mother.

Management of natural labour, including the arrangement of the bed and bed-room, and the proper dress and posture of the patient.

Tedious labour, its causes and treatment.

Labour requiring the use of instruments; their application taught on models in the class.

Cæsarean section and Sequltean operation—how to prevent the fœtus from getting large in uterus.

Premature labour—how to bring it on, and when it is necessary to do so.

Cross-births and their treatment.

Abortion—how to prevent it.

Extra uterine fœtations—how they occur, and their treatment.

Management of women after delivery, and treatment of such accidents and diseases as occur at this period.

Management of children after birth, washing, dressing, food, &c., and the choice of a wet-nurse, and treatment of such accidents as take place at this period, or soon after.

Practical midwifery taught by pupils attending patients in their own houses and in the Lying-in Hospital.

MEDICAL JURISPRUDENCE.

Professor, Dr. Hodges.

The Lectures in this Course are delivered twice weekly during six months. They include an account of the history and chemical investigation of poisons, and of the various subjects respecting which the evidence and assistance of Medical Practitioners may be required in Courts of Law. Experimental illustrations of the methods to be pursued in medico-legal inquiries are given, and frequent examinations held to test the progress of Students. No salary has been allocated to the Teacher of this department; and the duties, at the request of the Council, have, since the opening of the College, been performed by Dr. Hodges.

ENGLISH LAW.

Professor, Echlin Molyneux, Q.C.

The Professor of English Law, in conducting his department, has constantly kept in view the object of the Select Committee of the House of Commons in recommending the foundation of Chairs in Law in connexion with the Queen's Colleges, which as they stated in their Report on Legal Education, was not so much to prepare Candidates for the Bar, as to raise the standard of legal attainments amongst local practitioners, and especially to provide opportunities of legal education to qualify persons intended to fill administrative situations not strictly legal—a policy which has been since followed up by the Legislature conferring privileges, by way of inducement, on Candidates for the profession of attorney and solicitor, who shall avail themselves of these Schools of Law.

The Course of the *First* year, in this department, comprehends the elements of real and personal property, with the principles of conveyancing; that of the *Second* consists of an introduction to the principles and practice of Courts of Equity and the law of bankruptcy; the *Third* course includes the common law as incident to contracts, the nature and form of remedies by civil action, and an outline of criminal law, theoretical and administrative, which last completes the Curriculum of instruction required for the attainment of the Diploma of Elementary Law in the Queen's University. The studies prescribed for Students of the *Fourth* year to qualify them for the Degree of LL.B., embrace a more extended and detailed course of the subjects already enumerated, including the law of wills, powers, evidence, and procedure.

The Lectures are made auxiliary to the cotemporaneous studies directed, and are accompanied by interrogation, independent of the General Examination and that for Honors. Such books, cases, and decisions, and portions of treatises are pointed out for reading as are considered by the Professor most useful in elucidating a branch of learning which is scarcely furnished with books exclusively intended for instruction; and no efforts have been spared to point out the peculiarities of the law in Ireland, whether proceeding from statutes or inherent diversity of practice, or to direct attention to the recent changes which have been introduced into the course of procedure.

From the first opening of the College to the present time, the successive classes have spontaneously applied themselves with assiduity and perseverance to the various subjects of legal instruction, and several Non-Matriculated Students have, from time to time, availed themselves of the privilege afforded by the College Ordinances, of attending detached Courses of the Lectures on selected subjects; while the only disappointment manifested is at the meagre supply of law books to be found in the Library, a want which embarrasses both Professor and Student.

Under these circumstances, the Professor is gratified at being able to give the assurance that the Faculty of Law has fully realized the object of its founders, and that a further extension of its public benefits would ensue upon the adoption, by Government, of the suggestion made by the same Committee of the House of Commons, that a preference should be given to candidates for situations in the civil service, not of a purely legal nature, who could produce testimonials of legal attainments from those institutions—a rule which would fully accord with the principle laid down in a recent report of another Committee in relation to the civil service.

Jurisprudence and Political Economy.

Professor, T. E. Cliffe Leslie, LL.B.

The subjects embraced in the course of lectures on *Jurisprudence* are, according to the regulations of this College, (1) the Elements of Jurisprudence, (2) Civil Law, (3) Constitutional Law, (4) Colonial and International Law.

Appendix, No. 7.

Digest of Subjects and Courses.

In the treatment of these subjects, both the *Historical* and *Philosophical* Methods are followed in the lectures of the Professor. The Historical Method, for example, is applied in tracing the principal changes through which the laws of England have passed, the assignable causes of such changes, and the degree and manner in which, in comparison with the laws of Continental Europe, the laws of this kingdom have been affected by contact with the principles of Roman legislation. The method of Philosophical Analysis, on the other hand, is applied in investigating the doctrines of the foundation and classification of rights, the several parts and legitimate form of a complete code, the relation of Scientific Jurisprudence to other departments of Social Philosophy, and the means of improving the state of Positive Law as deducible from such considerations.

The subjects which a course of lectures on *Political Economy* must embrace are fewer and more definite than those classed under the less advanced and more complicated Science of Jurisprudence. It is the Professor's endeavour to illustrate the principles of Economic Science by the help of those practical applications which will be most interesting and useful in a large commercial town.

APPENDIX, No. 8.

Appendix, No. 8.

General Class Examination.

General Class Examination at the end of the Session 1856–57.

First Year Students.

Greek.—*Examiner, Professor MacDouall.*

I.—*Demosthenes—c. Midiam.*

1. Translate with accuracy the following extract:—

Εἰ μὲν τοίνυν, ὦ ἄνδρες Ἀθηναῖοι, μὴ χορηγὸς ὢν ταῦτ' ἐπεπόνθειν ὑπὸ Μειδίου, ὕβριν ἄν τις μόνον κατέγνω τῶν πεπραγμένων αὐτῷ· νῦν δέ μοι δοκεῖ κἄν, ἀσέβειαν εἰ καταγιγνώσκοι τις, τὰ προσήκοντα ποιεῖν. ἴστε γὰρ δήπου τοῦθ', ὅτι τοὺς χοροὺς ὑμεῖς ἅπαντας τούτους καὶ τοὺς ὕμνους τῷ θεῷ ποιεῖτε, οὐ μόνον κατὰ τοὺς νόμους τοὺς περὶ τῶν Διονυσίων, ἀλλὰ καὶ κατὰ τὰς μαντείας, ἐν αἷς ἁπάσαις ἀνῃρημένον εὑρήσετε τῇ πόλει, ὁμοίως ἐκ Δελφῶν καὶ ἐκ Δωδώνης, χοροὺς ἱστάναι κατὰ τὰ πάτρια καὶ κνισᾶν ἀγυιὰς καὶ στεφανηφορεῖν. ἀνάγνωθι δέ μοι λαβὼν αὐτὰς τὰς μαντείας.

Μαντεῖαι.

"Αὐδῶ Ἐρεχθείδαισιν, ὅσοι Πανδίονος ἄστυ
ναίετε καὶ πατρίοισι νόμοις ἰθύνεθ' ἑορτάς,
μεμνῆσθαι Βάκχοιο, καὶ εὐρυχόρους κατ' ἀγυιὰς
ἱστάναι ὡραίων Βρομίῳ χάριν ἄμμιγα πάντας,
καὶ κνισᾶν βωμοῖσι κάρη στεφάνοις πυκάσαντας."

"Περὶ ὑγιείας θύειν καὶ εὔχεσθαι Διὶ Ὑπάτῳ, Ἡρακλεῖ, Ἀπόλλωνι Προστατηρίῳ· περὶ τύχας ἀγαθᾶς, Ἀπόλλωνι Ἀγυιεῖ, Λατοῖ, Ἀρτέμιδι· καὶ κατ' ἀγυιὰς κρατῆρας ἱστάμεν καὶ χοροὺς καὶ στεφανηφορεῖν καττὰ πάτρια Θεοῖς Ὀλυμπίοις πάντεσσι καὶ πάσαις· καὶ δεξιὰς καὶ ἀριστερὰς ἀνίσχοντας μνασιδωρεῖν."

"Τῷ δήμῳ τῷ Ἀθηναίων ὁ τοῦ Διὸς σημαίνει· ὅτι τὰς ὥρας παρηνέγκατε τῆς θυσίας καὶ τῆς θεωρίας, αἱρετοὺς πέμπειν θεωροὺς ἕνεκα τούτου. τοὺς δὲ ἀπάγειν τῷ Διὶ τῷ Ναΐῳ τρεῖς βοῦς καὶ πρὸς ἑκάστῳ δύο οἶς, τῇ δὲ Διώνῃ βοῦν καλλιερεῖν· καὶ προσίτι τράπεζαν χαλκῆν, ἀνάθημα, ὃ ἀνέθηκεν ὁ δῆμος ὁ Ἀθηναίων."

"Ὁ τοῦ Διὸς σημαίνει ἐν Δωδώνῃ· Διονύσῳ δημοτελῆ ἱερὰ τελεῖν καὶ κρατῆρα κεράσαι καὶ χοροὺς ἱστάναι· Ἀπόλλωνι Ἀποτροπαίῳ βοῦν θῦσαι, καὶ στεφανηφορεῖν ἐλευθέρους καὶ δούλους, καὶ ἐλινύειν μίαν ἡμέραν· Διὶ Κτησίῳ βοῦν λευκόν

Εἰσίν, ὦ ἄνδρες Ἀθηναῖοι, καὶ αὗται καὶ ἄλλαι πολλαὶ μαντεῖαι τῇ πόλει κἀγαθαί. τί οὖν ἐκ τούτων ὑμᾶς ἐνθυμεῖσθαι δεῖ, ὅτι τὰς μὲν ἄλλας θυσίας τοῖς ἐφ' ἑκάστης μαντείας προφαινομένοις θεοῖς προστάττουσι θύειν, ἱστάναι δὲ χοροὺς καὶ στεφανηφορεῖν κατὰ τὰ πάτρια [πρὸς] ἁπάσαις ταῖς ἀεὶ ἀφικνουμέναις μαντείαις προσαναιροῦσιν ὑμῖν. οἱ τοίνυν χοροὶ πάντες οἱ γιγνόμενοι καὶ οἱ χορηγοὶ δῆλον ὅτι τὰς μὲν ἡμέρας ἐκείνας, ἃς συνερχόμεθα ἐπὶ τὸν ἀγῶνα, κατὰ τὰς μαντείας ταύτας ὑπὲρ ὑμῶν ἐστεφανώμεθα ὁμοίως ὅ τε μέλλων νικᾶν καὶ ὁ πάντων ὕστατος γενήσεσθαι· τὴν δὲ τῶν ἐπινικίων ὑπὲρ αὐτοῦ τότ' ἤδη στεφανοῦται ὁ νικῶν. τὸν οὖν εἴς τινα τούτων τῶν χορευτῶν ἢ τῶν χορηγῶν ὑβρίζοντα ἐπ' ἔχθρᾳ, καὶ ταῦτ' ἐν αὐτῷ τῷ ἀγῶνι καὶ ἐν τῷ τοῦ θεοῦ ἱερῷ, τοῦτον ἄλλο τι πλὴν ἀσεβεῖν φήσομεν; καὶ μὴν ἴστε γε τοῦθ', ὅτι, βουλόμενοι μηδένα ἀγωνίζεσθαι ξένον, οὐκ ἐδώκατε ἁπλῶς τῶν χορηγῶν οὐδενὶ προσκαλέσαντι τοὺς χορευτὰς σκοπεῖν· ἀλλ', ἐὰν μὲν καλέσῃ, πεντήκοντα δραχμάς, ἐὰν δὲ καθίζεσθαι κελεύσῃ, χιλίας ἀποτίνειν ἐτάξατε. τίνος ἕνεκα; ὅπως μὴ τὸν ἐστεφανωμένον καὶ λειτουργοῦντα τῷ θεῷ ταύτην τὴν ἡμέραν καλῇ μηδ' ἐπηρεάζῃ μηδ' ὑβρίζῃ μηδεὶς ἐξεπίτηδες. εἶτα τὸν μὲν χορευτὴν οὐδ' ὁ προσκαλέσας κατὰ τὸν νόμον ἀζήμιος ἔσται· τὸν δὲ χορηγὸν οὐδ' ὁ συγκόψας παρὰ πάντας τοὺς νόμους οὕτω φανερῶς οὐ δώσει δίκην; ἀλλὰ μὴν οὐδὲν ἔστ' ὄφελος καλῶς καὶ φιλανθρώπως τοὺς νόμους ὑπὲρ τῶν πολλῶν κεῖσθαι, εἰ τοῖς ἀπειθοῦσι καὶ βιαζομένοις αὐτοὺς ἡ παρ' ὑμῶν ὀργὴ τῶν ἀεὶ κυρίων μὴ γενήσεται.

2. State (*a*) how the question stands, generally, in regard to the genuineness of the oracles, the laws, and the depositions cited in the course of this Oration; (*b*) how far a decision on any one of those documents affects others; (*c*) what remarks occur to you upon each of the oracles quoted above, whether separately or in connexion with the context.

3. (*a*) Which of the oracles are Delphic, and which from Dōdōnē? (*b*) Give an Attic substitute for every word in them which presents an Epic or a Doric form. (*c*) In the first oracle, how may the reading, ὡραίων χάριν, be defended, instead of ὡραῖον χορόν, as by some proposed? (*d*) Is there any corresponding phrase in the third oracle? (*e*) How has the phrase, κνισᾶν βωμοῖσι, in the first oracle, been thought to favour a reading, κνισᾶν ἀγυιᾶς, in the introduction?

4. Explain, by etymology and usage, θεωρίας, ἀνάθημα (cp. ἀνάθεμα), ἐπινίκια, δημοτελῆ, λειτουργοῦντα, ἀνῃρημένον, πυκάσαντας, ἐπηρεάζῃ, μνασιδωρεῖν (cp. μνησικακεῖν), παρηνέγκατε, for which last substitute a verb more usually found in the same sense.

5. (*a*) Explain the epithets, Ὑπάτῳ, Ναΐῳ, Κτησίῳ, Προστατηρίῳ. (*b*) Supply the ellipsis in ὁ τοῦ Διὸς σημαίνει. (*c*) What deity is here designated Διώνη? (*d*) Who were *Erechtheus* and *Pandion*?

6. (*a*) What proper name represents, by its composition, χοροὺς ἱστάναι? and for what special reason was it given to the lyric poet, Tisias? (*b*) Which injunction, in one of the above oracles, may be illustrated by the Attic compound ἐπίβοιον, and by the Latin *ambegna bos* or *ambegna ovis*, which you will explain separately?

APPENDIX, No. 8.

General Class Examination

7. (*a*) To bring out distinctly the force of the clause, *βουλόμενοι μηδένα ἀγωνίζεσθαι ξένον*, substitute for the participle a (finite) verb, introduced by a suitable conjunction. (*b*) To bring out distinctly the complement of *ἐδώκατε*, substitute an expression which would be preferred by the English idiom.

8. Explain clearly the facts stated and contrasted in the sentence, *οἱ τοίνυν χοροὶ πάντες . . . ὕστατος γενήσεσθαι*; and, in doing so, (*a*) show that *κατὰ τὰς μαντείας ταύτας* belongs to the following clause, not to the preceding one, and (*b*) bring out the distinction between *ἐστεφανώμεθα* and *στεφανοῦται*.

9. (*a*) What is the sense of *ἀεὶ* in *τῶν ἀεὶ κυρίων* and *ταῖς ἀεὶ ἀφ*—(or *ἐφ*—) *ικνουμέναις*? (*b*) What is the force of the preposition in *προςαναιροῦσιν*? (*c*) Why ought the bracketed *πρὸς* to be ejected from the text?

10. (*a*) In the close of the third oracle, if you recognise the figure *zeugma*, what infinitive do you supply to govern *τράπεζαν*? (*b*) What is the subject of that infinitive, or the subject of *καλλιερεῖν*? and what is the subject of *πέμπειν* in a previous clause? (*c*) Point out several incongruities in the ordinary reading, *τῇ δὲ Διώνῃ βοῦν καὶ ἄλλα ἱερεῖα καὶ τράπεζαν χαλκῆν· καὶ προς τὸ ἀνάθημα ὃ ἀνέθηκεν ὁ δῆμος ὁ Ἀθηναίων.*

II.—Translate Locke's *exordium* into Attic prose:—

Since it is the understanding that sets man above the rest of sensible beings, and gives him all the advantage and dominion which he has over them, it is certainly a subject, even for its nobleness, worth our labour to inquire into. The understanding, like the eye, whilst it makes us see and perceive all other things, takes no notice of itself; and it requires art and pains to set it at a distance and make it its own object. But, whatever be the difficulties that lie in the way of this inquiry, whatever it be that keeps us so much in the dark to ourselves, sure I am that all the light we can let in upon our own minds, all the acquaintance we can make with our own understandings, will not only be very pleasant, but bring us great advantage in directing our thoughts in the search of other things.

[Another paper contained extracts from and questions upon the *Prometheus Vinctus* of Aeschylus.]

LATIN.—*Examiner, Rev. Professor Reichel.*

To be translated into Latin prose:—

We hear it not seldom said that ignorance is the mother of admiration. A falser word was never spoken, and hardly a more mischievous one: for it seems to imply that this healthiest exercise of the mind rests, for the most part, on a deceit and illusion, and that with better knowledge it would cease: while in truth, for once that ignorance leads us to admire that which, with fuller insight, we should perceive to be a common thing, and one demanding therefore no such tribute from us, an hundred, nay a thousand times, it prevents us from admiring that which is admirable indeed. And this is so, whether we are moving in the region of nature, which is the region of God's wonders, or even in the region of art, which is the region of man's wonders: and nowhere truer than in this sphere and region of language, which is about to claim us now. Oftentimes here we move up and down in the midst of intellectual and moral marvels, with vacant eye and careless mind, even as some traveller passes unmoved over fields of fame, or through cities of ancient renown—unmoved because utterly unconscious of the lofty deeds which have there been wrought, of the great hearts which spent themselves there. We, like him, wanting the knowledge and insight which would have served to kindle admiration in us, are oftentimes deprived of this pure and elevating excitement of the mind, and miss no less that manifold teaching and instruction which ever lie about our paths, and nowhere more largely than in our daily words, if only we knew how to put forth our hands and make it our own.—DEAN TRENCH.

Translate into English the following passages:—

1. Sed ut hic, qui intervenit, me intuens, ne ignoraret quae res agatur, de natura agebamus deorum; quae quum mihi videretur perobscura, ut semper videri solet, Epicuri ex Velleio sciscitabar sententiam: quamobrem, inquit, Vellei, nisi molestum est, repete quae coeperas. Repetam vero: quanquam non mihi sed tibi hic venit adjutor: *ambo enim, inquit adridens, ab eodem Philone nihil scire didicistis.* Tum ego, Quid didicerimus, Cotta viderit: tu autem nolo existimes me adjutorem huic venisse, sed auditorem, et quidem aequum, libero judicio, nulla ejusmodi adstrictum necessitate, ut mihi, velim, nolim, sit certa quaedam tuenda sententia. Tum Velleius, fidenter sane, ut solent isti, nihil tam verens, quam ne dubitare aliqua de re videretur, tanquam modo ex deorum concilio et ex Epicuri *intermundiis* descendisset; Audite, inquit, non futiles commenticiasque sententias, non opificem aedificatoremque mundi, Platonis de Timaeo deum; nec anum fatidicam Stoicorum *πρόνοιαν*, quam Latine licet providentiam dicere; neque vero mundum ipsum, animo et sensibus praeditum, rotundum, ardentem, volubilem deum: portenta et miracula non disserentium philosophorum sed somniantium . . . Longum est ad omnia; quae talia sunt, ut optata magis quam inventa videantur. Sed illa palmaris quidem, quod, qui non modo natum mundum introduxerit sed etiam manu paene factum, is eum dixerit fore sempiternum.

2. Redeo ad deos. Ecquos si non tam strabones, at paetulos arbitramur? ecquos naevum habere? ecquos silos, flaccos, frontones, capitones, quae sunt in nobis? an omnia emendata in illis? Detur id vobis. Num etiam una est omnium facies? nam si plures, aliam esse alia pulchriorem necesse est: igitur aliquis non pulcherrimus deus. Si una omnium facies est, *florere in caelo Academiam necesse est.*

3. Jactatur rerum utilium pars maxima, sed nec
Damna levant. Tunc, adversis urgentibus, illuc
Recidit ut malum ferro submitteret; ac se
Explicat angustum; discriminis ultima, quando
Praesidia afferimus navem factura minorem.
I nunc, et ventis animam committe, dolato
Confisus ligno, digitis a morte remotus
Quatuor aut septem, si sit latissima taeda!
Mox cum reticulis et pane et ventre lagenae
Aspice sumendas in tempestate secures.
Sed postquam jacuit planum mare, tempora postquam
Prospera vecturis fatumque valentius Euro
Et pelago, postquam Parcae meliora benigna
Pensa manu ducunt hilares et staminis albi
Lanificae, modica nec multum fortior aura
Ventus adest, inopi miserabilis arte cucurrit
Vestibus extentis et, quod superaverat unum,
Velo prora suo. Jam deficientibus austris
Spes vitae cum sole redit: tunc gratus Iulo
Atque novercali sedes praelata Lavinio
Conspicitur sublimis apex, cui candida nomen
Scrofa dedit, laetis Phrygiis mirabile sumen,
Et nunquam visis triginta clara mamillis.
Tandem intrat positas inclusa per aequora moles
Tyrrhenamque Pharon porrectaque brachia rursum
Quae pelago occurrunt medio longeque relinquunt
Italiam—non sic igitur mirabere portus
Quos natura dedit—sed trunca puppe magister
Interiora petit Baianae pervia cymbae
Tuti stagna sinus: gaudent ibi vertice raso
Garrula securi narrare pericula nautae.

What port is spoken of in the last part of this passage?

4. Attonito quum
Tale super coenam facinus narraret Ulixes
Alcinoo, bilem aut risum fortasse quibusdam
Moverat ut mendax *aretalogus.* In mare nemo
Hunc abicit saeva dignum veraque Charybdi
Fingentem immanes Laestrygonas atque Cyclopas?
Nam citius Scyllam vel concurrentia saxa
Cyaneis, plenos et tempestatibus utres
Crediderim, aut tenui percussum verbere Circes
Et cum remigibus grunnisse Elpenora porcis.
Tam vacui capitis populum Phaeaca putavit?
Sic aliquis merito nondum ebrius et minimum qui
De Corcyraea *temetum* duxerat urna;
Solus enim haec Ithacus nullo sub teste canebat.
Nos miranda quidem sed nuper consule *Junco*

Gesta super calidae referemus moenia Copti,
Nos vulgi scelus et cunctis graviora *cothurnis*,
Nam scelus, a Pyrrha licet omnia *syrmata* volvas,
Nullus apud tragicos populus facit.

1. Comment on the words and passages printed in *italics*.

2. Give a brief sketch of the doctrines of Epicurus stated in the first book of the De Natura Deorum, and in the first book of the De Finibus.

3. Specify the weak point of Epicurus' ethical system, as developed in the latter book.

4. From whom was the system of Epicurus chiefly borrowed: *a.* as to its physics; *β.* as to its ethics?

5. Mention the chief particulars of Cicero's life, and specify the years in which these two works of his were respectively published.

6. Give Juvenal's full name, and state what is known about him.

7. Quote any passages from his Satires that determine their dates.

8. Mention any peculiarities in Juvenal's style, particularly any words which he uses in a sense unknown to the golden age of Latin literature.

9. Give the etymology (when known) and the meaning of the following words: excdra, sitella, caesius, vadimonium, pinnirapus, sportula, lanista, opieus, mandra, rhombus, marra, pegma, structor, ofella, multicia, endromis, nassa, artopta, trechedipna, aholla, bascauda.

10. In what senses is *quin* used with the indicative?

11. When do *dum* and *donec* require the subjunctive?

12. When is *aliquis* used instead of *quisquam* in negative sentences?

13. Specify the names and the times of the festivals held at Rome in honour of Pales, of Flora, and of the Great Goddess. On what occasion was the last-mentioned festival instituted?

ENGLISH LANGUAGE.—*Examiner, Professor Craik.*

1. Describe and discriminate the three distinct forms which the national language of England has assumed since its first introduction into the country by the Angles and Saxons.

2. State with precision the cause which converted the first of these forms into the second, and that which converted the second into the third.

3. Enumerate the chief literary works which have come down to us in the English of the 11th, 12th, and 13th centuries, arranging them in the order of time, and giving an account of the date, the authorship, the subject, and the leading peculiarities of each.

4. State over what space of time, and over what kings' reigns, what is commonly known as the Period of Early English extends; and what is the special mark by which the language of that period is distinguished from that of the immediately preceding period on the one hand, and from that of the immediately subsequent period on the other, according to the view taken by Mr. Guest.

5. Give an account of the principal writer that we have belonging to the Period of Middle English, and enumerate as many as you can recollect of the differences between his language and that which we now speak.

6. Describe the English language in reference to—1. Its grammatical character; 2. Its vocabulary; 3. The other languages from which it has been immediately derived; 4. Its position in what is called the Indo-European family.

7. Relate what is stated by Higden and Trevisa about the employment formerly of the French Language in English Grammar-schools.

8. Translate the following passage accurately into modern English:—"And yee schulle understonde that Jerusalem of olde tyme, unto the time of Melchisedech, was cleped Jebus; and after it was clept Salem, unto the tyme of Kyng David, that put these two names to gider, and cleped it Jerosolomye. And after that men cleped it Jerusalem, and so it is cleped yit. And aboute Jerusalem is the kyngdom of Surrye."

9. Translate accurately the following lines into modern English:—

"A Scheffeld thwitel bar he in his hose;
Round was his face, and camois was his nose;
As pyled as an ape was his skulle;

* * * * * *

Ther durste no wight hand upon him legge,
That he ne swar anon he schuld abegge."

10. Give an account of the work called the Ormulum; and explain what appears to be the principle of the peculiar system of spelling adopted by the writer.

11. Give an account of the four systems which, according to Mr. Guest, have been adopted in English orthography at different periods, to mark the quantity (or rather quality) of the vowel sounds.

12. Write a short essay on the tendency to change inherent, and always more or less operative, in language.

MODERN LANGUAGES.—*Examiner, Dr. Frings.*

Dans les principales rues que le cortége royal devait parcourir, on avait dressé des arcades de feuillage et de verdure, des théâtres et des fontaines d'où le vin coulait à grands flots; sur une des places de la cité, s'élevait un élégant château de bois, du haut duquel plusieurs jeunes filles vêtues de blanc, et du même âge que le petit roi, firent pleuvoir sur lui, à son passage, des découpures dorées et de jolies fleurs de papier; après quoi elles lui présentèrent, ainsi qu'à sa suite, des coupes d'or remplies de vin que le prince accepta, tandis qu'un autre enfant, portant des ailes d'ange, se laissait glisser le long des murs du château, et lui posait sur le front une couronne d'or.

Le roi fut ensuite conduit à l'abbaye de Westminster, dont les salles étaient couvertes d'un riche tapis, et à l'entrée de laquelle il fut reçu sous un dais de soie bleue, que cinq barons soutenaient avec des lances d'argent. Le monarque ayant été sacré fut aussitôt revêtu de la robe royale qu'il ne quitta plus de la journée, mais le pauvre enfant se trouva tellement fatigué de cette longue cérémonie que l'on fut obligé de l'emporter presque mourant dans ses appartements.

1. How do you translate into French, phrases like the following?
"*I know him to be honest and sober.*"
"*The family of Wakefield was never known to turn from the door a wearied traveller.*"

2. State what you know about the position of Adjectives in French.

3. Give the feminine of the following Adjectives: *malin, doux, blanc, public, vif, heureux, vieux, jeune, beau, fou.*

4. Give the plural of the following nouns: *œil, ciel, animal, bal, aïeul, cheveu, fou, hibou, tuyau, arc-en-ciel.*

5. When is the preposition *To* before a verb in the Infinitive to be translated by *de*, and when by *à*?

6. Name as many as you know of the French verbs which require the infinitive following without any preposition.

7. When do the French use the double prepositions: *de chez, de dessous, de dessus, d'auprès*?

8. How are the personal pronouns arranged in French when the verb is in the Imperative? Give examples both affirmative and negative.

9. When do you translate the preposition *With* by the French preposition *à*; when by *de*, and when by *avec*?

Ich blieb hier die Nacht bei einem alten Schäfer, und ſah die Sternen auf- und untergehen. Den andern Morgen ſchritt ich den Berg hinab und kam in ein reizendes Dorf an der Küſte, nicht weit von der Stadt, wo ich zwei Tage verweilte. Nichts auf der Welt füllt ſo ſtark mächtig die Seele als der Anblick des offnen Meeres. Das Meer iſt doch das ſchönſte was wir hienieden haben. Sonne, Mond und Sterne ſind dagegen nur einzelne glänzende Punkte, und ſammt dem blauen Mantel des Aethers darüber her nur Zierde der Wirklichkeit. Wer das Meer nicht kennt kommt mir unter den Menſchen wie ein Vogel vor, der nicht fliegen kann; oder der ſeine Flügel nicht braucht, wie die Sträuße, Hühner und

Appendix, No. 8.

General Class Examination.

Gänſe. Hier iſt ewige Klarheit und Reinheit; und alles Kleine, was ſich in den Winkeln der Städte in uns niſtet, wird hier von den großen Maſſen weggeſcheucht. Ich ſah hinaus in die unermeßliche Sphäre von Gewäſſern, und die ungeheure Majeſtät wollte mir die Bruſt zerſprengen

1. When do the Germans apply the auxiliary "Werden" with a past participle instead of the English "*To be.*"

2. Name as many as you know of the German prepositions which govern both the Dative and Accusative, and give examples.

3. Name the prefixes which cannot be separated from the verb under any circumstances.

4. Name those which are separable, and state when the separation takes place.

5. What is the *past-participle ending* of regular verbs? And how does it end when irregular?

6. Decline Singular and Plural, mein guter Freund, das warme Bad, dieſe kleine Frau, kein gutes Bett.

7. Give the *past-participle* of the following verbs: aufgießen, eſſen, erhalten, bewohnen, lügen, leiden, meiden, gelten, täuſchen, entgehen, ankommen

8. Give the *Imperfect* of the above (No. 7,) mentioned verbs.

9. Give the *Plural* of the following nouns: Herr, Haus, Land, Herz, Soldat, Meſſer, Gabel, Löffel, Hand.

Translate:

I was singing the last verse of a song, as I stood on the hill which commands the first prospect of Austria, when suddenly a trio of wind-instruments accompanied my voice. I turned round and saw three young men in long blue mantles. When they had looked at me for a while very earnestly, one of them stept nearer to me and said: "We guessed by your dress that you were an Englishman, and thought we might win a trifle, as a *viaticum*, from you; but it seems you are too a musician." I confessed that this was the better guess of the two, and that I had just returned from Rome, and had found it necessary to scrape my way over the country with a fiddle, which I was carrying in a bag on my back. We are going to breakfast, said one of the Germans, will you not take a cup of coffee with us? I readily accepted this invitation. Our vacation will soon end, said one, we must be back at Prague towards the end of next week. There must be many village churches in this neighbourhood, and the parsons will help us to Prague. They will give you little money, said the other, but plenty of sermons on the folly of a wandering life. However, we are in no great hurry. Our professors are still, I dare say, at Carlsbad, and will not be very punctual on term-day. "*Distinguendum est,*" said the first, "*quod licet Jovi non licet bovi.*"

Mathematics.—*Examiner, Professor Tait.*

ALGEBRA.

1. Simplify the expressions $\frac{x^3-x^2-90x+105}{x^3-8x^2-21x+108}$, $\frac{\frac{x-1}{x+1}-\frac{x+1}{x-1}}{\frac{x-1}{x+1}+\frac{x+1}{x-1}}$, and $\frac{\frac{x^2-x+1}{x^2+x+1}-1}{\frac{x^2-x+1}{x^2+x+1}+1}$, and add the two latter.

2. Extract the square root of $x^2+\frac{1}{x^2}-2\left(x+\frac{1}{x}\right)+3$, and find that of $1-x$ to five terms.

3. Solve the equations

$$x^6+12=x(8x^2+x+4) \text{ and } \left.\begin{array}{l} x(y+z)=a^2 \\ y(x+z)=b^2 \\ z(x+y)=c^2 \end{array}\right\}.$$

4. Prove the Binomial Theorem when the index is a positive integer, and employ it to develop $\left(x-\frac{1}{x}\right)^6$ and $(1-x)^{-3}$.

5. Find the coefficients of x^8 in the expansions of $(1-x+x^2-x^4)^5$ and $\frac{x-1}{x^2-3x-4}$ in ascending powers of x.

6. Find the value of x as a continued fraction from the equations $3^x=5$, and $x^2-3x+1=0$.

7. Find the chance of throwing 36 exactly in 4 throws, with a pair of dice.

8. If $(e-1)-\frac{(e-1)^2}{2}+\frac{(e-1)^3}{3}-$&c., to infinity$=1$, show that $e^x=\Sigma_0^\infty\left(\frac{x^n}{\lfloor\underline{n}}\right)$; and thence prove that with the conditions $\Pi(a)=a_1a_2a_3\ldots\ldots$, $\Sigma(p)=m$, $\Sigma(pq)=n$, $\frac{m^n}{\lfloor\underline{m}\lfloor\underline{n}}=\Sigma\left(\frac{1}{\Pi(\lfloor\underline{p})\Pi(\lfloor\underline{q})}\right)$.

9. If the even numbers be written 2; 4, 6; 8, 10, 12; &c., there being n in the nth group, show that the sum of that group is n^3+n.

10. 335241 is in the scale of 6, find its equivalent in the scale of 7; and in the scale of 11 divide $t8592$ by $8t7$.

11. Explain the method of proportional parts as applied to a table of Logarithms of numbers, proving the approximate truth of the formula.

12. Assuming that if n be indefinitely great $\left(1+\frac{x}{n}\right)^n=e^x$, find in the same case the value of $\frac{2n}{\left(1+a^{\frac{x}{n}}\right)^n}$.

TRIGONOMETRY, &c.

1. The plane angles which contain a solid angle are together less than 4 right angles.

2. The tangent at any point of a parabola bisects the angle between the focal distance and the diameter. Prove this, and employ it to draw tangents to a parabola from a given external point.

3. Prove that perpendiculars from the foci on tangents to an ellipse, meet them in a circle whose diameter is the axis major. Thence show how to draw tangents to an ellipse from a given external point.

4. Define the sine, tangent, and versed-sine of an angle, and find a relation between each two of them.

5. Explain the circular measure of an angle, and find that of 64° 3′ 10″.

6. Prove that $\sin.2\theta=2\sin.\theta\cos.\theta$ and $\cos.2\theta=\cos.^2\theta-\sin.^2\theta$, and thence find $\sin.4\theta$ and $\cos.4\theta$ in terms of $\sin.\theta$ and $\cos.\theta$.

7. Having given the sides of a triangle, find formulae for the area and angles, in a shape adapted to logarithmic calculation.

8. Find in terms of the sides the radius of a circle inscribed in a triangle, and show that if the perimeter be given the area varies at this line.

9. Prove that when n is a positive integer

$$(\cos.\theta+\sqrt{-1}\,\sin.\theta)^n=\cos.n\theta+\sqrt{-1}\,\sin.n\theta.$$

and extend it to the case of n negative.

10. Apply the above formula to expand $\cos.6\theta$ and $\sin.7\theta$ in powers of the sine and cosine of θ.

11. Assuming the exponential values of $\sin.\theta$ and $\cos.\theta$, show that $\tan.^{-1}x=x-\frac{x^3}{3}+\frac{x^5}{5}-$&c, to infinity, and deduce a formula suited to give a rapid approximation to the value of π.

12. Investigate the formula which gives the change in $\log.\tan.\theta$ for a small change in θ, and thence show for what values of the angle the log.tan. cannot be used to find it accurately by the method of proportional parts.

Second Year Students.

Greek.—*Examiner, Professor MacDouall.*

I.—*Aristophanes—The Frogs.*

1. Translate, accurately, but in a good English style—

τὸν ἱερὸν χορὸν δίκαιόν ἐστι χρηστὰ τῇ πόλει
ξυμπαραινεῖν καὶ διδάσκειν. πρῶτον οὖν ἡμῖν δοκεῖ
ἐξισῶσαι τοὺς πολίτας κἀφελεῖν τὰ δείματα.
κεἴ τις ἥμαρτε σφαλείς τι Φρυνίχου παλαίσμασιν,
ἐγγενέσθαι φημὶ χρῆναι τοῖς ὀλισθοῦσιν τότε

αἰτίαν ἐκθεῖσι λῦσαι τὰς πρότερον ἁμαρτίας.
εἶτ' ἄτιμον φημὶ χρῆναι μηδέν' εἶν' ἐν τῇ πόλει.
καὶ γὰρ αἰσχρόν ἐστι τοὺς μὲν ναυμαχήσαντας μίαν
καὶ Πλαταιᾶς εὐθὺς εἶναι κἀντὶ δούλων δεσπότας·—
κοὐδὲ ταῦτ' ἔγωγ' ἔχοιμ' ἂν μὴ οὐ καλῶς φάσκειν ἔχειν,
ἀλλ' ἐπαινῶ· μόνα γὰρ αὐτὰ νοῦν ἔχοντ' ἐδράσατε·—
πρὸς δὲ τούτοις εἰκὸς ὑμᾶς, οἳ μεθ' ὑμῶν πολλὰ δὴ
χοἰ πατέρες ἐναυμάχησαν καὶ προσήκουσιν γένει,
τὴν μίαν ταύτην παρεῖναι ξυμφορὰν αἰτουμένοις.
ἀλλὰ τῆς ὀργῆς ἀνέντες, ὦ σοφώτατοι φύσει!
πάντας ἀνθρώπους ἑκόντες ξυγγενεῖς κτησώμεθα
κἀπιτίμους καὶ πολίτας, ὅστις ἂν ξυνναυμαχῇ.
εἰ δὲ ταῦτ' ὀγκωσόμεσθα, κἀποσεμνυνούμεθα
τὴν πόλιν, καὶ ταῦτ' ἔχοντες κυμάτων ἐν ἀγκάλαις,
ὑστέρῳ χρόνῳ ποτ' αὖθις εὖ φρονεῖν οὐ δόξομεν .....
πολλάκις γ' ἡμῖν ἔδοξεν ἡ πόλις πεπονθέναι
ταὐτὸν ἔς τε τῶν πολιτῶν τοὺς καλούς τε κἀγαθοὺς
ἔς τε τἀρχαῖον νόμισμα καὶ τὸ καινὸν χρυσίον.
οὔτε γὰρ τούτοισιν, οὖσιν οὐ κεκιβδηλευμένοις,
ἀλλὰ καλλίστοις ἁπάντων, ὡς δοκεῖ, νομισμάτων,
καὶ μόνοις ὀρθῶς κοπεῖσι καὶ κεκωδωνισμένοις
ἔν τε τοῖς Ἕλλησι καὶ τοῖς Βαρβάροισι πανταχοῦ,
χρώμεθ' οὐδέν, ἀλλὰ τούτοις τοῖς πονηροῖς χαλκίοις,
χθές τε καὶ πρώην κοπεῖσι, τῷ κακίστῳ κόμματι,
τῶν πολιτῶν θ' οὓς μὲν ἴσμεν εὐγενεῖς καὶ σώφρονας
ἄνδρας ὄντας καὶ δικαίους καὶ καλούς τε κἀγαθούς,
καὶ τραφέντας ἐν παλαίστραις καὶ χοροῖς καὶ μουσικῇ,
προὐξελῶμεν, τοῖς δὲ χαλκοῖς καὶ ξένοις καὶ πυρρίαις
καὶ πονηροῖς κἀκ πονηρῶν εἰς ἅπαντα χρώμεθα,
ὑστάτοις ἀφιγμένοισιν, οἷσιν ἡ πόλις πρὸ τοῦ
οὐδὲ φαρμακοῖσιν εἰκῇ ῥᾳδίως ἐχρήσατ' ἄν.
ἀλλὰ καὶ νῦν, ὦνόητοι! μεταβαλόντες τοὺς τρόπους
χρῆσθε τοῖς χρηστοῖσιν αὖθις· καὶ κατορθώσασι γὰρ
εὔλογον· κἄν τι σφαλῆτ', ἐξ ἀξίου γοῦν τοῦ ξύλου,
ἤν τι καὶ πάσχητε, πάσχειν τοῖς σοφοῖς δοκήσετε.

2. Explain, briefly, but lucidly, the political events referred to in this *parabasis* (giving the dates wherever you can), and the measures proposed in it as likely to remedy some social evils.

3. Elucidate the reference to the history of the Attic coinage.

4. State the laws of the trochaic tetrameter, and notice any metrical peculiarities in this passage.

II.—Translate either in Homeric Hexameters or in Iambic Trimeters—

Nought is on earth more sacred or divine,
That gods and men do equally adore,
Than this same Vertue that doth right define;
For the hevens themselves, whence mortal men implore
Right in their wrongs, are ruled by righteous lore
Of highest Iove, who doth true iustice deale
To his inferiour gods, and evermore
Therewith containes his heavenly commonweale:
The skill whereof to princes hearts he doth reveale.

Well therefore did the antique world invent
That Iustice was a god of soveraine grace,
And altars unto him and temples lent
And hevenly honours in the highest place;
Calling him great Osiris, of the race
Of the old Ægyptian kings that whylome were;
With fayned colours shading a true case;
For that Osiris, whilest he lived here,
The iustest man alive and truest did appeare.

[An extract from Herodotus, with questions upon it, was the subject of another paper, together with an English passage to be translated into Greek prose.]

LATIN.—*Examiner, Rev. Professor Reichel.*

Translate into English the following passages:—

I.—*Megadorus.* Nunc quoquo venias, plus plaustrorum in aedibus
Videas quam ruri quando ad villam veneris.
Sed hoc etiam pulchrum est, prae quam ubi sumtus petunt:
Stat fullo, *phrygio*, aurifex, lanarius,
Ciniflones, patagiarii, indusiarii,
Flammearii, violarii, cerinarii
Aut *manulearii* aut *murobrecharii*;
Propolae *linteones, calceolarii,*
Sedentarii sutores, *diabrathrarii,*
Solearii adstant, adstant *molochinarii*;
Petunt fullones, sarcinatores petunt.
Strophiarii adstant, adstant *semizonarii.*
Jam hosce absolutos censeas: cedunt, petunt
Trecenti: circumstant *phylacistae* in atriis,
Textores, *limbularii, arcularii.*
Ducuntur, datur aes. Jam hosce absolutos censeas:
Quum incedunt infectores *crocotularii*,
Aut aliqua mala crux semper est, quae aliquid petat.

II.—*Captivi.* Unum exorare vos sinite nos. *Lorarius.* Quidnam id est?
Ca. Ut sine hisce arbitris atque vobis locum
Detis nobis loqui.
Lo. Fiat, abscedite hinc: nos concedamus huc.
Sed brevem orationem incipisse. *Ca.* Hem mi istuc
Certum erat: concede huc. *Lo.* Abi tu istim. *Tyndarus.* Obnoxii
Ambo vobis sumus propter hanc rem, *quum, quae*
Volumus nos copiae facitis nos compotes.
Philocrates. Secede huc nunc iam, si videtur, procul,
Ne arbitri dicta nostra arbitrari queant
Neu permanet palam haec nostra fallacia.
Nam doli non doli sunt, nisi astu colas,
Sed malum maximum, si id palam provenit.
Nam si herus tu mihi's atque ego esse me tuum
Servum adsimulo, tamen viso opus't, cauto opus't
Ut sobrie hoc sineque arbitris
Accurate agatur, docte et diligenter.
Tanta incepta res est: haud somniculose hoc
Agundumst. *Ty.* Ero ut me voles esse. *Ph.* Spero.
Ty. Nam tu nunc vides pro tuo caro capite
Carum offerre me meum caput vilitati.
Ph. Scio. *Ty.* At memento scire, quando id quod voles habebis.
Nam maxuma pars fere morem hunc homines habent:
Quod volunt, dum impetrant
Sibi, boni sunt; sed ubi jam penes sese habent,
Ex bonis pessimi et fraudulentissimi
Fiunt. nunc ut mihi te volo esse autumo.

PLAUTUS.

III.—Secutae dehinc Tiberii literae in Sex. Vestilium praetorium, quem Druso fratri percarum in cohortem suam transtulerat. Causa offensionis Vestilio fuit, seu composuerat quaedam in C. Caesarem ut impudicum, sive ficto habita fides. Atque ob id convictu principis prohibitus cum senili manu ferrum tentavisset, obligat venas: precatusque per codicillos, immiti rescripto, venas resolvit. Acervatim ex eo Annius Pollio, Appius Silanus, Scauro Mamerco simul ac Sabino Calvisio, majestatis postulantur, et Vinicianus Pollioni patri adjiciebatur, clari genus, et quidam summis honoribus. Contremuerantque patres, (nam quotusquisque adfinitatis aut amicitiae tot illustrium virorum expers erat?) ni Celsus urbanae cohortis tribunus, tum inter indices, Appium et Calvisium discrimini exemisset. Caesar Pollionis ac Viniciani Scaurique causam ut ipse cum Senatu nosceret, distulit, datis quibusdam in Scaurum tristibus notis. Ne feminae quidem exsortes periculi. Qua occupandae reipublicae argui non poterant, ob lacrimas incusabantur; necataque est anus Vitia, Fufii Gemini mater, quod filii necem flevisset. Haec apud Senatum. Nec secus apud principem Vescularius Atticus ac Julius Marinus ad mortem aguntur, e vetustissimis familiarium, Rhodum secuti et apud Capreas individui, Vescularius insidiarum in Libonem internuntius: Marino participe Sejanus Curtium Atticum oppresserat. Quo laetius acceptum sua exempla in consultores recidisse.—TACITUS.

A.—1. Give the full name, the dates of the birth and death, of Plautus, and the particulars of his life handed down to us, as they have been settled by the latest critics.

APPENDIX, No. 8.

General Class Examination.

2. How many plays of Plautus do we still possess? Account for the preservation of these plays from Ritschl's probable conjecture with regard to the Fabulae Varronianae.

3. Mention some of the peculiarities of Plautus' syntax.

4. Explain or translate the following phrases:—
Adire manum alicui. Fieri dicta compendii volo.
Et eum mihi (memoras) esse morbum *ut qui med opus sit insputarier?*

5. Where are the scenes of the Aulularia and Captivi laid, respectively? Explain the name of the former of these plays.

6. Give the derivations and full meanings of the various words, and explain the construction of the phrases printed in *italics* in the above extracts.

7. Specify the metres of the lines in the second of the above extracts, and the licences which Plautus has allowed himself in those metres.

B.—1. Mention any particulars about Tacitus, the historian, you recollect.

2. When was the first law of *majestas* passed, and by whom? Define the meaning of the term, and state the gradually increasing extent and severity of the sanctions of the law.

3. Give the dates of the beginning and end of the reign of Tiberius, and mention the principal events that took place during his reign.

4. Give a brief account of the suppression of the conspiracy of Sejanus, and the date of his fall.

5. In what respects does Mr. Merivale think that the common idea of the character of Tiberius ought to be modified.

To be translated into Latin prose:—

The retirement of Tiberius did not fail, however, to be followed by a succession of public calamities, and these were generally ascribed to so unusual and inauspicious a proceeding. A private speculator had undertaken, as a matter of profit apparently, one of the magnificent works which, in better times, it was the privilege of the chief magistrates, or candidates for the highest offices, to construct for the sake of glory or influence. In erecting a vast wooden amphitheatre at Fidenae, he had omitted the necessary precaution of securing a solid foundation: and when the populace of Rome, unaccustomed, from the parsimony of Tiberius, to their favourite spectacles at home, were invited to the diversions of the opening day, which they attended in immense numbers, the mighty mass gave way under the pressure, and covered them in its ruins. Fifty thousand persons, or according to a lower computation, not less than twenty thousand, men and women of all ranks, were killed or injured by this catastrophe, which called forth an edict from the Senate, forbidding any one henceforth to exhibit a gladiatorial show unless his means were independent and ample, while the rash projector of the spectacle was driven into exile—a mild punishment, perhaps, if it was right to punish him at all. The care and attention lavished upon the sufferers by the wealthiest people at Rome, the spontaneous offering of medical care and attendance, served at least to remind the citizens of the best days of the republic, in seasons of public calamity. But this sorrow had not been forgotten, when it was redoubled by the disasters of a great fire, which ravaged the Caelian hill, and a considerable area of the city besides, all occupied with dwellings of every class of citizens. This catastrophe, however, gave Tiberius occasion to exhibit a munificence and consideration for his people, for which he had not yet acquired credit. The Senate decreed that the site should henceforth bear the name of Augustus, in memory of this imperial liberality: and more particularly, because, in the midst of the general destruction, an image of the Emperor, it was reported, had alone been left standing and unscathed. A similar prodigy had occurred in the case of another person of the imperial house—the famous Claudia Quinta—whose effigy had twice escaped the flames, and been thenceforth set up as a sacred relic in the temple of the mother of the Gods.—MERIVALE.

MATHEMATICS.—*Examiner, Professor Tait.*

PLANE CO-ORDINATE GEOMETRY.

1. Show that the general equation in x and y of the first degree represents a straight line. What is the meaning of the constants in the following forms of this equation?

$$\frac{x}{a}+\frac{y}{b}=1\,,\ y=mx+c,\ \frac{ax}{\sqrt{a^2+b^2}}+\frac{by}{\sqrt{a^2+b^2}}-\frac{c}{\sqrt{a^2+b^2}}=0,\ \frac{x-a}{\cos.\theta}=\frac{y-b}{\sin.\theta}\,,\ \text{and}\ \frac{x-a}{x+a'}=\frac{y+b}{y-b'}.$$

Find the equation to a line parallel to $ax+by=0$, and at a distance c from the point $(p,\ q)$.

2. If $\alpha\equiv x\cos.\alpha+y\sin.\alpha-p=0$ be the equation to a straight line, show that α is the length of the perpendicular from $(x,\ y)$ on $\alpha=0$. Find the length of the perpendicular from $(x,\ y)$ on $\alpha-\beta=0$.

3. If two straight lines be at right angles, they may be represented by $(y-mx+a)(my+x+b)=0$. What are the conditions that $Ax^2+Bxy+Cy^2+Dx+Ey+F=0$ represent two straight lines at right angles to each other?

4. Find generally the polar equation to a curve, the distance of any point of which from a given line is proportional to its distance from the pole.

5. In the general equation in (3) what constants determine the *nature* of the curve, which its position? and generally if the left member be called ϕ, what is the meaning of ϕ at any point in the plane of the curve?

6. If $S=(x-a)^2+(y-b)^2-r^2=0$ be the equation to a circle, what is the meaning of S at any point in its plane? and what theorem is expressed by

$$\frac{S-kS_1}{1-k}=S_1=0\,?$$

7. Find the locus of a point at which two given finite lines subtend equal angles.

8. Show that pairs of tangents at the extremities of any chord drawn through a fixed point to a conic meet in a straight line.

9. Find the equation to the locus of a point from which if tangents be drawn to a given ellipse they will include a given angle.

10. In any curve find the length of the perpendicular on the tangent in terms of

$$\theta\ \text{and}\ u\left(=\frac{1}{r}\right).\quad \text{Show that}\ pu^2\frac{ds}{d\theta}=1\,.$$

11. A number of straight lines are drawn from a point, find the equation to the curve which cuts them all at a given angle.

DIFFERENTIAL CALCULUS, &c.

1. Assuming that

$$lt_\infty\left(1+\frac{1}{x}\right)^x=\varepsilon,\quad \text{find}\ lt_\infty\left(\frac{2}{1+\sqrt[x]{\frac{a}{b}}}\right)^x.$$

2. Define the differential coefficient of a function of one variable, and directly from the definition find those of

$$x(x+1)(x-1)\,,\ \varepsilon^{x^2}\ \text{and}\ \log.\log.\ x\,.$$

3. If $z=F(y)$ and $y=f(x)$ show that $\frac{dz}{dx}=\frac{dz}{dy}\cdot\frac{dy}{dx}$.

Apply this to the differentiation of cos.cos. x and

$$\tan^{-1}\left(\frac{\varepsilon^x-1}{\varepsilon^x+1}\right)^{-\frac{3}{2}}$$

4. Show that if $y=f(x)$, y increases with x if $\frac{dy}{dx}$ be positive, and *vice versâ*. Hence defining a maximum and a minimum of a function of one variable, show how to find such.

$$\text{Ex.}\quad \frac{dy}{dx}=x(x-1)^2(x+3)^3$$

5. Find the point in a given line $\alpha=0$ from which if perpendiculars be drawn to $\beta=0$, $\gamma=0$, their sum is a minimum.

APPENDIX, No. 8.

General Class Examination.

6. Enunciate Taylor's Theorem, and explain what is meant by its failure in particular cases.

7. Deduce Maclaurin's Theorem, and apply it to expand ε^x and log $(1+x)$ in powers of x, giving in each case after n terms a limit to the sum of the remaining ones.

8. Transform $x\frac{dy}{dt}-y\frac{dx}{dt}$ and $\left(\frac{d^2x}{ds^2}\right)^2+\left(\frac{d^2y}{ds^2}\right)^2$ to polar co-ordinates.

9. Find the equation to the normal at any point of a plane curve, and show that the locus of ultimate intersections of consecutive normals is the centre of curvature.

10. Integrate the differentials $x^3(1-x^2)^5dx$, $(\cos x)^3dx$,

$$\frac{3+x}{x^2-x+1}dx \text{ and } \frac{x^{y}}{1-x^{2y}}\left(\frac{y}{x}\,dx+\log.\,xdy\right).$$

11. Find the values of

$$\int_0^\infty\frac{dx}{(1+x^2)^m} \text{ and } \int_0^1 x^m(1-x)^m dx$$

when m is a positive integer.

12. Solve the equation $\int_0^x xydx=\frac{3}{2}x\int_0^x ydx$.

13. Integrate the differential equations:

$$(x+y)\frac{dy}{dx}+(x-y)=0$$

$$x^2\frac{dy}{dx}+xy=x^my^3$$

$$\frac{d^2y}{dx^2}-2\frac{dy}{dx}+2y=x^3$$

$$\frac{d^2y}{dx^2}+n^2y=a\cos(nx+a).$$

LOGIC.—*Examiner, Rev. Dr. M'Cosh.*

1. "To suppose that man has sprung from the brutes is altogether preposterous. Man is possessed of a responsible and immortal soul, and as such is widely separated from the lower animals."

How many propositions are there in these sentences? What are the terms? Indicate what sort of terms they are.

2. Define "general notion"? What is meant by marks of notions? State and illustrate what is meant by concrete general notions? Can there be definite marks of such notions? Show how such notions admit of higher and lower generalizations.

3. Name some distinguished realists, nominalists, and conceptualists. Is there any truth in realism? What reality is there in a general notion? What ambiguity is there in the word "conception"?

4. Mention some of the common abuses of language as representing notions. In doing so, enunciate the laws of thought involved in language.

5. What is the distinction between contrary and contradictory terms? Give examples. What is the distinction between contrary and contradictory opposition of propositions? Give examples. When a proposition is given, what may we infer as to its contrary and contradictory?

6. Give concrete examples of each of the three first figures of the syllogism. Reduce those in the second and third figure.

7. What are the special rules, with reasons, of the second figure? What arguments fall naturally into this figure?

8. What is a dilemma? Put the following in the form of a dilemma:—"We must suppose the universe to be the best possible, for if it were not so it must arise either from inability or unwillingness on the part of God."

9. What is meant by explanation? What is done in fact when we give an explanation of a phenomenon? Does explanation necessarily remove every mystery?

10. What are the various applications of the word "induction"? What is meant by a complete induction? Explain and examine the statement of Bacon that induction *per enumerationem simplicem ubi non reperitur instantia contradictoria* is *res puerilis*.

11. We find crystallization taking place in a number of circumstances having this in common that there is the deposition of a solid matter either in a state of fusion or solution? What are we entitled to argue, and by what method? Enunciate the canon, and state how the reasoning could be put in proper form.

12. What are the various significations of the word "analogy"? When are we enabled to argue from analogy positively or negatively? What is the nature of the argument from analogy in Natural History? What in Butler's Analogy? In what syllogistic form could the greater part of Butler's work be put?

13. What is the difference between intuition and experience? Is our belief in testimony derived from intuition or experience? How can reasoning from testimony be put syllogistically? Examine the following statement by Laplace. "Let us suppose that a fact is transmitted to us by twenty witnesses—the first transmitting it to the second, the second to the third, and so on in succession. Let us farther suppose that the probability of each testimony is equal to nine-tenths; that of the fact resulting from testimonies will be less than one-eighth. This diminution of probability may be compared to the extinction in the clearness of objects by the interposition of several plates of glass; an inconsiderable number of plates being sufficient to intercept the sight of an object which can be distinctly seen through a single plate of glass." He concludes that after thousands of years the historical facts which are now most certain will be rendered doubtful.

14. If in a case of circumstantial evidence we were to reason thus:—this man is a murderer, because he was found with blood on his clothes, and murderers have blood on their clothes; this man is a murderer, because the property of the murdered man was found in his possession, and murderers have the property of the murdered man in their possession,—would the reasoning be logically conclusive? What then would be necessary in order to the validity of the reasoning?

For mere *pass*, the student may answer any one or more of the following, in place of a corresponding number of the above.

1. What are the Five Predicables? Explain and illustrate them.

2. Why must the conclusion in the third figure be particular?

3. What is meant by formal fallacies? Mention the principal formal fallacies and explain their nature.

4. Locke, in showing that the syllogism is of little or no value, proves that men can reason without being instructed in the methods of syllogising. Of what fallacy is he guilty?

5. What is the distinguishing character of demonstrative evidence? To what sciences is it capable of being applied? How does it admit of being carried farther in mathematics than in any other sciences?

6. What are Idols of Bacon? Explain what is meant by each?

CHEMISTRY.—*Examiner, Dr. Andrews.*

1. What are the limits to the use of a mercurial thermometer; and how are temperatures beyond those limits measured?

2. To what degrees of Fahrenheit's scale do the following degrees of the Centigrade and of Réaumur's scale correspond—

—30° Réaumur
—25° Cent.
0° Réaumur
+20° Cent.

3. Explain the process of evaporation at common temperatures, and the cause of the absorption of heat which accompanies it.

4. What is meant by the elastic force of a vapour, and how is it measured?

5. Give some account of the "spheroidal state" of matter, and of Boutigny's experiment, in which water is frozen upon a metallic plate heated to bright redness.

6. How is it shown that liquids are in general bad conductors of heat?

APPENDIX, No. 5.

General Class Examination.

7. What is the composition by weight and by volume of the compounds of oxygen and nitrogen?

8. Describe the process for preparing nitrogen gas from atmospheric air.

9. How is the hypochlorous acid prepared, and what are its properties? State also the composition of the chloride of lime.

10. Give a short description of the compounds of phosphorus and hydrogen.

11. State the principal sources of silica, and describe the method of extracting it from its compounds with the bases.

12. What are the properties of aluminium?

13. Mention the composition of the purer varieties of clay, such as Kaolin, and show how they are derived from the decomposition of feldspar.

14. Give an account of allotropy, and illustrate it by a reference to the allotropic states of oxygen, phosphorus, sulphur, and carbon.

15. How is the sulphur in an organic body containing it determined?

16. Enumerate the principal acids which are homologous with the formic acid, and mention also the corresponding alcohols, when those alcohols have been discovered.

17. How is dextrine prepared and what are its properties?

18. What are the tests of strychnine?

19. Give a general account of the volatile alcaloids, and enumerate the most important of them, both natural and artificial.

20. How is the atomic volume of a body calculated?

21. What relation exists between the boiling points of homologous compounds? (Kopp's law).

22. Give a general description of the construction and theory of the modifications of the voltaic pile commonly designated Daniell's battery, and Groves' battery.

23. State the fundamental laws of voltaic induction.

NATURAL HISTORY.—*Examiner, Dr. Dickie.*

ZOOLOGY.

1. State the ordinary temperature of Mammals and Birds; specify any exceptional case.

2. Describe in a general way the modifications of the skeleton of birds.

3. Describe the structure of the heart in Reptiles, and the course of the blood.

4. Explain the import of the term analogue, and illustrate by reference to examples in Vertebrata and Invertebrata.

5. Describe the modifications of the respiratory apparatus in Mollusca.

6. Refer the following to their places in the system of classification: Amphibia, Chelonia, Arachnida, Cephalopoda; state briefly their characters.

7. State the characters of Diptera and Lepidoptera.

8. Refer Cystica and Cestoidea to their place in the system; state also their characters.

9. Give the general characters of Echinodermata; enumerate the orders, and mention examples.

10. Refer Hydraida to their place in the system, and state their general characters.

BOTANY.

1. Describe the forms of Inflorescence called Raceme and Amentum or Catkin, and mention examples in plants examined during the Session.

2. Mention examples of Hypogynous Exogens examined during the Session.

3. State the parts of a perfect stamen, and describe their true nature and structure.

4. State the relations of the embryo in an orthotropous ovule.

5. Indicate the position which Ferns occupy in the system of classification; describe also the phases of their development.

6. Describe the relative position of floral whorls, where there are 5 sepals, 5 petals, 10 stamens, 5 carpels.

7. State the properties of cells in relation to fluids.

8. State the natural order to which the common vetch, Vicia Sepium, belongs, and describe the structure of the flower in that plant.

9. Name and describe the accompanying plant. State its position in the Linnæan and Natural Sytems.

THIRD YEAR STUDENTS.

HISTORY AND ENGLISH LITERATURE.—*Examiner, Professor Craik.*

ENGLISH LITERATURE.

1. Define what the Literature of a language essentially is, as distinguished from the general mass of what may be written in the language.

2. Explain the distinction between the Poetical (or Artistic) and the Prosaic (or Mechanical) in each of the several exemplifications of the two, with the common principle upon which it rests.

3. Examine what appears to be the doctrine of Aristotle on the subject of Imitation in the Poetical; comparing it with that of Plato, discussing the common assumption that the only kind of Poetry which he holds to be properly Imitative is Dramatic Poetry, and explaining what was probably his conception of the nature of Imitation.

4. Characterise the Poetical Genius of Chaucer.

5. Characterise the Poetical Genius of Spenser.

6. Write a short critical or analytical account of one of Shakespeare's Plays.

7. Describe and compare the versification of Milton, of Dryden, and of Pope.

8. Give an account of the Boyle and Bentley controversy.

9. Compare the novelists, Richardson, Fielding, Smollett, Sterne, and Goldsmith, noticing their principal works.

10. Sketch the literary history of Samuel Johnson, and sum up his claims as a writer and thinker.

11. Sketch the literary and political career of Burke, and characterise his eloquence and his philosophy.

12. Discriminate the three great historical writers of the last century, Hume, Robertson, and Gibbon, in respect of genius and manner.

13. Give an account of any one or more of the following writers:—Swift, Bolingbroke, De Foe, Collins, Gray, Young, Thomson.

HISTORY.

1. Explain the origin and import of the terms Latitude and Longitude.

2. State the positions of the following places in the ancient world, adding the modern names, or those of the towns now occupying or supposed to occupy the same sites: Bactra, Maracanda, Persepolis, Ecbatana, Susa, Babylon, Nineveh, Sardis, Sparta, Saguntum, Gades, Massilia, Lugdunum, Trapezus.

3. Describe the courses of the following rivers:—Blue River, Yenisei, Brahmapootra, Ganges, Indus, Nerbudda, Tigris, Euphrates, Jordan, and, with their ancient names, Gihon, Sihon, Don, Dnieper, Bog, Danube, Rhine, Rhone, Loire, Garonne, Ebro.

4. Explain the Julian and Gregorian Reformations of the Calendar, with the principle upon which they proceeded.

5. Explain the manner in which time might be conveniently enough reckoned simply by days, and what would be the advantages of that system.

6. Explain the Metonic Cycle, the Cycle of Calippus, the term Bissextile, Old and New Style, the Cycle of the Sun, the Julian Period, the Golden Number, the Dominical Letter, the Epact, the Era of the Olympiads, the Era of Nabonassar.

7. Enumerate the several parallel departments into which the history of nations might be most conveniently distributed, arranging them in their proper order, and indicating their relative importance.

8. Explain how the entire course of human affairs may be best divided into Periods, according to the commonly received chronology.

9. Explain in what respects the anticipations of historic wisdom differ from the predictions of Mathematical and Physical Science.

10. State the circumstances of irregularity or peculiarity under which the English Crown was acquired in the cases of Henry II., John, Henry IV., Henry VII., James I., William III., and George I.

11. State the succession of the Parliaments in the reign of James I.

12. Explain the cases of Fortescue and Goodwin, of Shirley, of Impositions, and of the Postnati.

13. Explain the original nature of what is properly called the *Court*, and what has thence arisen in our existing political system.

14. State the succession to the Crown of France in the 14th and 15th centuries.

15. State the succession to the Empire from Charlemagne to the end of the Suabian dynasty.

16. Sketch the history of the first four Crusades.

NATURAL PHILOSOPHY.—*Examiner, Dr. Stevelly.*

1. Explain in what sense forces whose directions contain a right angle are considered as entirely independent each of the other.

2. Two forces, one equal to 52lbs., the other to 39lbs., act together at the same point of a body in directions which contain a right angle and which are given, find the Resultant in magnitude and direction.

3. Explain how the single equivalent of two forces applied simultaneously to two distant points of a rigid mass is found; explain when it can be done, and when not; and point out the reason, when it cannot.

4. Investigate the two components of the weight of a suspended heavy body. one of which produces pressure on the axis, the other tending to disturb the state of the body; and point out their changes of amount and of direction in the several leading positions of the centre of gravity.

5. Explain how the systems of weights and measures in use in the British Empire have been obtained; and may at any time be re-adjusted.

6. State the leading uses of machines whether simple or complex.

7. Explain the sense in which the common mechanical maxim that "What a machine gains in power it loses in speed" is alone true.

8. Explain the contrivance by which the fusee of a watch is made to act as a more energetic lever, while the mainspring acts more weakly, as the watch is going down.

9. State clearly the relation that exists between the moving (or Statical) force, and the accelerating (or Dynamical) force, and the manner in which either can be deduced from the other.

10. Explain the experimental proof, that an assigned force is uniform, as, for instance, gravity within moderate ranges, friction, and the like.

11. Prove that the times in which two heavy bodies will run down the lengths of equally inclined planes are as the square roots of these lengths.

12. Explain the action of Bramah's Hydraulic Press, and the method of calculating its energy.

13. A fragment of rock which weighs 527¼ grains is found, when suspended by a horse-hair in distilled water at the standard temperature, to counterpoise but 284·83 grains. Calculate its specific gravity; explain the principle, and point out how the result is affected by the first-named weight being taken in air.

14. Explain what is meant by a pencil of rays in optics. Distinguish the several kinds of pencils, and explain by which kind of pencil we see objects of ordinary vision.

15. Show how images of visible objects are formed by plane reflectors.

16. Enunciate the law of the ordinary refraction of light, and explain its experimental proof.

17. Describe the most important facts observed during the diurnal revolution of the fixed stars.

18. Explain what is meant by the right ascension of a heavenly object, and the manner in which right ascensions are observed.

PHYSICAL GEOGRAPHY.—*Examiner, Dr. Dickie.*

1. State the general physical peculiarities of the North portion of the New World.

2. Describe the physical characters of the South-East portion of the Old World.

3. State the nature and cause of land winds and sea breezes.

4. State the direction of the *upper* constant atmospheric currents; explain their origin, and the cause of their direction.

5. Explain the cause of the prevalence of Easterly winds in Spring in the Northern temperate zone.

6. State the causes of decreased temperature in the higher strata of the atmosphere.

7. State the general position of the Gulf-weed, and mention the opinions entertained regarding it.

8. Mention natural families of plants which increase toward the tropics, and state those which prevail in the Arctic zone.

9. State the general distribution of Pachyderms, distinguishing those which are more prevalent in the torrid zone.

10. State the mammals and reptiles which attain the highest Latitude in the Northern hemisphere.

METAPHYSICS.—*Examiner, Rev. Dr. M'Cosh.*

1. There has been a threefold classification of the faculties of the mind very commonly adopted; mention some of the forms of this classification, and offer comments on them.

2. As an exercise in psychological analysis, specify the faculties involved in the following, "I have a most vivid picture at this moment of the old man as I last saw him. Never have I met any one who so eminently deserved the name of philosopher. His power of unravelling the complex net of nature, his perpetual ascent to principles, his lofty ideal of perfection, his stern purpose and his large benevolence rendered him the highest specimen of humanity I have met with. I feel a pleasure in the very contemplation of him."

3. Examine the following, "A stick appears crooked in water; the moon seems within a few hundred yards of the earth; an object has one colour to one eye and another colour to another eye. It is evident that we cannot trust our senses, and what then can we trust? If colour be given to the object to the mind why not extension? why not every thing else that we suppose it to possess?"

4. What are our original and what our acquired perceptions through the sense of sight? How do we come to know distance by this sense?

5. What events do we remember most readily and frequently? What control has the will over the train of thought? What is the difference between remembrance and reminiscence?

6. What is the difference between analytic and synthetic judgments? What are the laws of identity, contradiction, and excluded middle?

7. What is the peculiarity of emotion? What excites emotion? What sort of ideas should the orator or poet present in order to awaken feeling?

8. Is or is there not virtue in affection?

9. Are there *a priori* principles in the mind? Under what conditions may *a priori* principles be employed in philosophic speculation? Can there be an *a priori* science?

10. What is the nature and what the relation of primitive cognitions, beliefs, and judgments to one another? With which does the mind commence?

11. What is involved in our idea of substance? Give the definition of Spinoza, and examine it. State and criticise the views of Locke on this subject.

12. Whence does the mind get the idea of power? In answering this question state the views of Locke and also of Kant.

13. "When equals are taken from equals the remainders are equals. In order to understand this, the child will use its apples or its marbles. It is quite

APPENDIX, No. 8.

General Class Examination.

clear therefore that mathematical axioms are generalizations of experience." Examine this statement.

14. Under what precautions are we at liberty to employ the argument from common sense according to Sir W. Hamilton? Are you satisfied with these precautions?

1. How does Cousin classify the systems of philosophy that have appeared? Examine this classification? What is his own system? Can such a system be the last in philosophy?

2. In what age did Descartes live? What are his principal works? What is his famous argument in behalf of the existence of mind? What seems to be its import and its force?

3. In what age did Leibnitz live? What different kinds of evil does he specify? How did he account for the existence of these evils?

4. When was *Locke* born? When did he die? What was the date of his Essay? Into how many books is it divided? Give a brief account of the topics discussed in each.

5. What is Locke's account of the genesis and origin of our ideas of space and time? Cousin in criticising Locke, draws a distinction between the logical and chronological order of our ideas. State and illustrate and examine this distinction as applied to our ideas of space and time.

6. What view did Samuel Clarke take of space and time? What argument did he construct from our ideas of space and time?

7. What was the age of Kant? What is his principal work? What is the object aimed at in this work? What are his views of space and time?

8. In what sense did Berkeley admit, and in what sense deny, the existence of matter? How did Reid meet Berkeley? Did he adopt the right method? Was he successful?

9. Name the philosophical works of Reid? What, according to him, are the processes involved in perception? What other views have been entertained on this subject?

10. What philosophers have supposed that the mental power which looks at moral good and evil is a sentiment or a feeling? Examine their views.

13. Name some of the philosophers of the Sensational School in France, and indicate the age in which they lived? What is the peculiarity of their views? How would you meet them?

14. What, according to Sir W. Hamilton, does the phrase intuition denote as applied to the principles of common sense? What are the significations of the word intuition?

JURISPRUDENCE AND POLITICAL ECONOMY.—*Examiner, Professor Leslie.*

1. Explain and illustrate Mr. Senior's statement that "value is, with a few exceptions, strictly local."

2. Malthus defines *wealth* as "the material things necessary, useful, and agreeable to man, which have required some portion of human exertion to appropriate or produce." Show that this definition contains two improper exclusions, by one of which one of the three great sources of revenue is excluded from the meaning of the word wealth.

3. State the "four elementary propositions" of political economy, as laid down by Mr. Senior.

4. The first of the above propositions is, as expressed by Mr. Senior, an inadequate statement of the law of mind which leads to the production of wealth?

5. Define the terms "necessaries," "decencies," "luxuries."

6. (*a*) What are the great instruments of production? (*b*) Which of these are the two "primary instruments?"

7. Suppose wealth of some kind to have been accidentally found, or to have come into the possession of its owner as rent, and to be employed by him in production, does it become capital when so employed? *If it does*, what correction does Mr. Senior's definition, that capital is "an article of wealth, the result of human exertion, employed in the production or distribution of wealth," require? *If it does not*, under which of the three great instruments of production would you class it, and why?

8. Show how land-rent first arises in a young colony.

9. Show how it increases in an old country.

10. Taxes on manufactured commodities tend to raise their price by an amount exceeding the amount of the tax?

11. State concisely the arguments urged by Mr. Senior to prove that it is better for the labouring classes that the chief expenditure of the rich should consist in the purchase of commodities, than in the maintenance of servants and retainers.

12. Show that Mr. Senior has overlooked a circumstance of much importance in connexion with the above question, which of the two modes of expenditure on the part of the rich is more beneficial to the labouring classes.

13. Notwithstanding this circumstance, it is true that a change in the habits of expenditure of the rich from the maintenance of retainers to the purchase of luxuries, is ultimately beneficial to the labouring classes, and why?

14. Explain what is meant by *the par of exchange, the real exchange, the nominal exchange.*

15. What is the limit to the possible fall in the real exchange?

16. Show that an unfavourable state of the real exchange operates to encourage exportation and discourage importation of commodities.

17. In what sense is there a "law of nature" which is, or ought to be, the foundation of positive law?

18. Show how the feudal system retarded the progress of agriculture after the fall of the Roman Empire.

19. How did the improvement of towns lead to the improvement of the country?

20. What is the meaning of the phrase "leges legum."

21. What economical causes led to the decline of the ancient county courts?

22. What is the foundation of the right of property?

23. What is meant by the "codification" of laws?

24. What is Lord Bacon's admonition respecting the period at which codification is proper?

PRIZE EXAMINATION.

JURISPRUDENCE AND POLITICAL ECONOMY.—*Examiner, Professor Leslie.*

1. Define the terms—*Political Economy; Cost of Production; Rent; Fixed and Circulating Capital.*

2. Show how the value of an article is regulated where there is no monopoly, and also in each of the cases of monoply described by Mr. Senior.

3. Is it true or not, and why, that the labouring classes are not interested in the length of the period which elapses between the commencement of the production and the sale of commodities which they do not consume?

4. Does rent form part of the cost of production of corn, or not, and why?

5. Does rent form a part of the cost of production of any commodities?

6. What is the subject of the first book of the "Wealth of Nations," according to A. Smith's own account, in his introduction?

7. "A diamond has scarcely any value in use," says Adam Smith. Is this true in the economical sense of utility?

8. Trace the effect upon wages of considerable changes in the price of food; first, in the case of a great *temporary*, and, secondly, in the case of a great *permanent*, fall in its price.

9. What are the causes of the inequalities of wages and profit in different employments?

10. Is it true or false, that high profits tend to raise the price of commodities much more than high wages, and why?

11. Define *Money*, and explain its uses.

12 (*a*). What was a Pound (sterling) in the reign of William I?

(*b*.) What *is* a Pound?

13. Give an account of the objects and chief provisions of the Bank Charter Act of 1844.

14. What is a tax? a direct tax? an indirect tax?

15. Trace the incidence of a tax on house-rent.

16. Would a tax on all commodities have any, and, if any, what effect on prices?

17. Point out the different effects of a tax on land proportioned to the rent, and one fixed at so much per cultivated acre.

18. Explain the scheme of the Sinking Fund, and show where its fallacy lies.

19. Is Political Science (not Political Economy) an *inductive* or a *deductive* Science, in your opinion, and why?

20. Explain the doctrine of the Social Compact, and show its fallacy.

21. Define Jurisprudence, and *Positive Law*.

22 (*a*). What is the philosophical foundation, if any, of the right of property?

(*b*.) What is the historical foundation, if any, of that right?

23. What is meant by "the doctrine of a *Negative Community*?"

24. Is there any natural right of inheritance, and, if so, how founded?

FIRST YEAR ENGINEERING STUDENTS.

MINERALOGY AND GEOLOGY.—*Examiner, Dr. Wyville Thomson.*

1. Name the various products of modern volcanic action, and describe their composition and mode of occurrence.

2. Name some of the minerals most usually found filling up the Amygdaloidal cavities in Trap.

3. Is there any difference between the Igneous Rocks associated with the older, and those associated with the newer, stratified formations?

4. Give the characters of the various orders, recent and fossil, of the class *Reptilia*.

5. What Orders, Genera, and Species, of Fishes are characteristic of the various divisions of the *Old Red Sandstone* system?

6. Name and characterize the orders of the class "Echinodermata." What are the peculiarities of the *Echinoidea* of the Carboniferous period? What are the distinctions of the Mezozoic Crinoids contrasted with the Palæozoic? State the vertical range of the orders *Blastoideæ* and *Cystideæ*.

7. Explain generally Miller's notation for the face of a simple crystal. On what property of all natural crystals is it founded? How many faces has the form (h, k, o), where h and k are different, in the Cubic and Rhombohedral systems respectively, and what is the *form* of the faces of $\omega\ (h, k, o)$ in the Cubic system.

8. Show how to find in the Cubic system the symbols of pairs of faces which replace symmetrically the edges of a simple form. Show that this process applied to the Cube $(1, o, o)$ gives the Tetrakis-Hexahedron $(1, h, o)$ and find the angle between the faces $(1, h\ o)$ and $h\ o\ 1$.

SURVEYING.—*Examiner, Professor Godwin.*

1. The diagonal of a trapezium is three hundred and seventy-six yards, and the sum of the perpendiculars six hundred and ninety-seven feet, what is the content in acres?

2. The three sides of a triangle are 1,470, 1,860, and 1,430 links, what is the content in acres?

3. Describe the method of measuring an angle with the pocket sextant.

4. It is required to measure an angle beyond the limit of the arc of the sextant, state the method of measuring such angle.

5. Describe a method of finding the true meridian from the pole star, without the aid of an instrument or calculation.

6. How is the true latitude of a given place found?

7. State the usual method of finding the longitude of a given place.

8. Describe the best method of ranging straight lines in carrying on an extensive survey.

9. Describe the use of the vernier, and method of using it.

10. The diagonal of a trapezium is twenty statute chains, and the sum of the perpendiculars eighteen chains fifty links, state the quantity in statute, plantation, and Cunningham acres.

11. The gradient of a railway is one in one hundred and seventy, what is the rise per mile.

12. Why is a datum line adopted in plotting a section?

The other Classes were examined with the Students in Arts.

SECOND YEAR ENGINEERING STUDENTS.

PRACTICAL MECHANICS.—*Examiner, Dr. Stevelly.*

1. A cistern 12 feet long, 9 feet broad, and 8 feet deep, is placed 36 feet at its bottom above the surface of a reservoir of water; calculate the number of units of work expended in filling the cistern.

2. Explain the causes which make the strain on the rope by which a horse moving along the side-path, tows a boat along a canal, greater than it would be if the same boat were towed, at the same speed, by a tug moving straight before it.

3. Enunciate the laws of friction, and explain the essential practical distinction between friction and the resistance of a fluid to a body's motion through it.

4. Explain what is meant by the co-efficient of roughness, and give the principle and details of its experimental determination.

5. Give a general description of the principle on which Professor Hodgkinson determined the strongest form of cast-iron beams; and his methods of expressing numerically the strength of castings, and their relative commercial value.

6. Investigate the curve which must bound a beam of uniform breadth, flat in the upper surface, supported at one end, and loaded at the other, that the strength of every section of it may bear the same proportion to the strain at that section.

7. Explain the diagram by which the relation of the forces concerned in the equilibrium of the arch is best investigated, and deduce from it the amount of pressure at the crown of the arch, and show that this is the horizontal thrust at any joint.

8. In one of the Bramah presses employed for raising the Britannia tubular bridge up to its position over the Menai Straits, the diameter of the pump piston was one inch, and of the pressure piston (or ram) 20 inches. A force of 2½ tons was exerted each stroke on the pump piston: calculate the pressure exerted by the ram; and give the proof.

9. Explain clearly what is meant by "the duty" of a Steam Engine, and point out the distinction between "the duty" and "the work" of an Engine; and show to which "horse power" applies.

10. State some of the important practical consequences to be deduced from the fact ascertained by the Cornish experiments, that the same quantity of fuel will evaporate the same volume of water into steam, of any tension.

11. Explain the Mechanical Principles on which uniformity of motion is considered so important in Dynamic Machines, and explain some of the contrivances for equalizing motions.

12. Give the investigation of the action of a stream on an undershot water-wheel; and the determination of the velocity at which a maximum of work is secured.

13. Enunciate the general rule for the "velocity ratio" of any two connected pieces in a train of mechanism.

14. Two bevel wheels are to be placed on shafts in a given position, whose axes, if produced, meet (of course in a given angle), the velocity ratio at which these

Appendix, No. 8.

General Class Examination.

wheels are required to revolve is also given. Find the position of two frusta which will answer these conditions.

15. Explain the principle of "Hook's geering," and point out the inconvenience which, in practice, is found to accompany its use. Show the origin of this inconvenience, and its remedy.

Civil Engineering.—*Examiner, Professor Godwin.*

1. What should be the depth of a lattice girder, the span being sixty-six feet?

2. What would be the strain upon such girder, with a load of twenty tons in the centre?

3. What would be the deflexion of such girder with such a load?

4. Give a sketch of a "Warren's" girder, and show the braces that are in tension, and those in compression.

5. Give a sketch, in section, of the best form for a cast-iron beam or girder,

6. Give a formula for the mean velocity of a river.

7. A canal lock contains one hundred thousand cubic feet of water; in what time would the water be discharged through a sluice two feet by two feet, the depth from the centre of the sluice to the surface of the water being eleven feet?

8. Describe the use of the link motion in a locomotive engine.

9. What proportion should the air-pump of a condensing engine bear to the cylinder?

10. What is meant by the limiting angle of resistance in earth-works?

11. What is meant by a Truss in Carpentry? Give a sketch of a method of trussing a beam.

12. Give the proportions of the column and entablature of the Corinthian Order.

The other Classes were examined with the Students in Arts.

Faculty of Medicine.

Medical Jurisprudence.—*Examiner, Dr. Hodges.*

1. What is the composition of opium, and the symptoms produced by an over-dose of that drug?

2. State the symptoms produced by a poisonous dose of tartar emetic, and the treatment required in cases of poisoning with the preparations of antimony.

3. How is antimony to be distinguished from arsenic in medico-legal investigations?

4. What are the methods required for the separation and identification of nicotine?

5. Describe the methods of employing the so-called hydrostatic test, in cases of supposed infanticide.

Surgery.—*Examiner, Dr. Gordon.*

1. Describe the causes, diagnosis, organic changes, and treatment of chronic cystitis.

2. Enumerate briefly the main facts to be kept in view in the reduction and treatment of simple and compound fractures, as well as the practice to be pursued when the latter is complicated with profuse hæmorrhage.

3. Enumerate the causes of prolapsus ani, and give a brief description of the various modes of treatment.

4. Describe briefly the signs of the several dislocations of the hip-joint and the lesions observed in the dissection of such injuries.

Practical Chemistry.—*Examiner, Dr. Andrews.*

1. State the composition of the double chlorides of potassium and platinum, and of sodium and platinum, and describe their distinctive properties.

2. If sulphuric acid or a soluble sulphate produce a precipitate in a solution, what bases may be present, and how can you determine the nature of the precipitate?

3. What bases yield precipitates with ammonia which are soluble in an excess of the precipitant? State also how they may be distinguished from one another.

4. Describe fully the method of separating and determining the quantities of phosphoric acid, carbonic acid, lime, and magnesia, in such a compound as bone earth.

5. What are the reactions produced by caustic potash with a soluble salt of copper, in presence of grape sugar and of cane sugar?

6. Describe the mode of analysing a mineral containing silica, alumina, sesquioxide of iron, lime, and magnesia.

7. How is the amount of silica in spring or river water determined?

8. Describe the distinctive reactions of uric acid, and the mode of separating the acid itself from the urates of soda and ammonia.

9. What are the sources, natural and artificial, of allantoin?

10. Give an account of the mode of preparing "crystallized bile," of the composition of bile, and of the action of re-agents on the two acids which bile contains.

11. Mention some of the artificial processes by which urea can be prepared.

12. What are the tests of morphine and of strychnine?

Matriculation Examination.

Matriculation Examination.—October, 1857.

Latin.—*Examiner, Rev. Professor Reichel.*

To be re-translated into Latin.

Cæsar having received as hostages the first men of the state and the two sons of King Galba himself, and having had all the arms delivered up to him out of the town, received the Suessiones on surrender, and led his army into the territory of the Bellovaci. When they had betaken themselves with all their property into the town of Bratuspantium, and when Cæsar with his army was about five miles from that town, all the elders going forth from the town began to stretch forth their hands to Cæsar, and with their voices to declare that they submitted to his good faith and power, and did not mean to contend in arms against the Roman people. Also, when he had approached the town and was pitching his camp there, the women and boys besought peace of the Romans with their hands extended after their custom.

Divitiacus pleads on their behalf; "that the Bellovaci had throughout all time been at peace and in amity with the Aeduan State; that being urged by their own chiefs, who said that the Aedui had been reduced to slavery by Cæsar and were bearing all kinds of indignities and insults, they had both fallen away from the Aedui and made war upon the Roman people; that those who had been leaders in that resolve had fled into Britain, because they perceived how great a disaster they had brought upon their State: that not only the Bellovaci, but also the Aedui upon their behalf, besought him to act with his usual clemency and mildness towards them; that if he should adopt this course, he would increase the influence of the Aedui with all the Belgae, a point of great consequence, since by their assistance and resources they were accustomed to bear whatever wars might happen."—Cæsar.

Mathematics.—*Examiner, Professor Tait.* ✓

ARITHMETIC.

1. Simplify as much as possible the following expressions:

$$\frac{2}{15}-\frac{1}{24}+\frac{3}{40},\quad \frac{3\frac{1}{3}}{6\frac{1}{4}}+\frac{3\frac{1}{2}}{7\frac{1}{2}}\ \text{and}\ \frac{3+\frac{1}{5+\frac{1}{7}}}{7+\frac{1}{5+\frac{1}{3}}}.$$

2. Reduce £ ·003 to pence, and £ ·00$\dot{3}$ to a vulgar fraction of half-a-crown.

Appendix, No. 8.

Matriculation Examination.

3. Find the value of 317·586 acres at £8 9*s.* 7½*d.*, and also the value per acre that the above may be worth £2,000.

4. Calculate to 6 places of decimals the value of

$$\frac{\cdot 001589}{186\cdot 5}+\frac{2}{7\cdot 82\times 771\cdot 3}.$$

5. Extract the square roots of 25000, ·0102030201, and ·4.

6. If 8 men dig in 12 days of ten hours a trench 350 feet long, 6 broad and 2 deep, what depth of a trench 400 feet long, and 5 feet broad can 9 men dig in 20 days of 11 hours?

ALGEBRA.

1. Given $a=6$, $b=5$, $c=4$ find the values of

$$\big(b-(a-c)\big)-\big(b-(a+c)\big),\ (a+b+c)^2-2(ab+ac+bc)$$

and $\sqrt{(a+b+c)(a+b-c)(a-b+c)(-a+b+c)}$.

2. Simplify $\dfrac{x^2+2x-35}{x^2-x-20}$, $\dfrac{x(x-1)+2x+1}{x(x^3-1)-(1-x)}$ and $(x+\sqrt{x^2-1})(x-\sqrt{x^2-1})$.

3. Divide x^5+1 by $x+1$ and extract the square root of $(x^4+1)+2x(x^2+1)+3x^2$.

4. Solve the simple equations:

(*a*) $x-5=3x-17$.

(β) $23-4x=x-7$.

(γ) $\dfrac{x-1}{x+3}=\dfrac{2x-3}{2x+1}$.

(δ) $\dfrac{x+a}{x-a}\cdot\dfrac{x+b}{x-b}=\dfrac{x-a}{x+a}\cdot\dfrac{x-b}{x+b}$

and show that the value of each side of (δ) is unity.

SCHOLARSHIP EXAMINATIONS.—OCTOBER, 1857.

Scholarship Examinations

LITERARY SCHOLARSHIPS.

FIRST YEAR STUDENTS.

GREEK.—*Examiner, Professor MacDouall.*

I.—1. Translate accurately and clearly these lines from the *Ilias*, III, 38–66:—

Τὸν δ' Ἕκτωρ νείκεσσεν ἰδὼν αἰσχροῖς ἐπέεσσιν·
"Δύσπαρι,[1] εἶδος ἄριστε, γυναιμανές, ἠπεροπευτά![2]
αἴθ' ὄφελες[3] ἄγονός τ' ἔμεναι ἄγαμός τ' ἀπολέσθαι!
καί τε τό[4] βουλοίμην, καί κεν πολὺ κέρδιον ἦεν
ἢ οὕτω λώβην τ' ἔμεναι καὶ ὑπόψιον ἄλλων.
ἦ που καγχαλόωσι[5] καρηκομόωντες Ἀχαιοὶ
φάντες ἀριστῆα πρόμον ἔμμεναι, οὕνεκα καλὸν
εἶδος ἔπ'·[6] ἀλλ' οὐκ ἔστι βίη φρεσίν, οὐδέ τις ἀλκή.
ἦ τοῖος δὴ ἐών, ἐν ποντοπόροισι νέεσσιν
πόντον ἐπιπλώσας, ἑτάρους ἐρίηρας ἀγείρας,
μιχθεὶς ἀλλοδαποῖσι γυναῖκ' εὐειδέ' ἀνῆγες
ἐξ ἀπίης γαίης, νυὸν ἀνδρῶν αἰχμητάων,
πατρί τε σῷ μέγα πῆμα πόληΐ τε παντί τε δήμῳ,
δυσμενέσιν μὲν χάρμα, κατηφείην δὲ σοὶ αὐτῷ;
οὐκ ἂν δὴ μείνειας ἀρηΐφιλον Μενέλαον;
γνοίης χ', οἵου φωτὸς ἔχεις θαλερὴν παράκοιτιν.
οὐκ ἄν τοι χραίσμῃ[7] κίθαρις τά τε δῶρ' Ἀφροδίτης
ἥ τε κόμη τό τε εἶδος, ὅτ' ἐν κονίῃσι μιγείης.[7]
ἀλλὰ μάλα Τρῶες δειδήμονες· ἦ τέ κεν ἤδη
λάϊνον ἕσσο χιτῶνα[8] κακῶν ἕνεχ', ὅσσα ἔοργας."
Τὸν δ' αὖτε προσέειπεν Ἀλέξανδρος θεοειδής·
"Ἕκτορ! ἐπεί με κατ' αἶσαν ἐνείκεσας οὐδ' ὑπὲρ αἶσαν—.[9]
αἰεί τοι κραδίη πέλεκυς ὥς ἐστιν ἀτειρής,
ὅς τ' εἶσιν[10] διὰ δουρὸς ὑπ' ἀνέρος, ὅς ῥά τε τέχνῃ
νήϊον ἐκτάμνῃσιν,[7] ὀφέλλει δ' ἀνδρὸς ἐρωήν·
ὣς σοὶ ἐνὶ στήθεσσιν ἀτάρβητος νόος ἐστίν.
μή μοι δῶρ' ἐρατὰ πρόφερε χρυσέης Ἀφροδίτης·
οὔ τοι ἀπόβλητ' ἐστὶ θεῶν ἐρικυδέα δῶρα,
ὅσσα κεν αὐτοὶ δῶσιν,[7] ἑκὼν δ' οὐκ ἄν τις ἕλοιτο.[7]

2. In brief notes upon the words and phrases numbered above, adduce compounds analogous in formation and force to δύσπαρι,—mention and illustrate the derivation of ἠπεροπευτά and καγχαλόωσι,—explain the usage of τό, ἔπι, εἶσιν διά, αἴθ' ὄφελες ἔμεναι,—elucidate the import of λάϊνον ἕσσο χιτῶνα,—supply the ellipsis after ἐπεὶ ἐνείκεσας,—account for the respective modes and times of χραίσμῃ, μιγείης (notice also μιγεῖης given in some editions), ἐκτάμνῃσιν, δῶσιν, ἕλοιτο.

3. Not only in these cases, but likewise in others, presenting words or forms of words, phrases, or constructions, inadmissible in Attic prose, substitute such equivalents as the Attic idiom would prefer.

II.—1. Translate likewise the following extract from Lucianus' *Cataplus*:—

ΜΙΚ. ἀλλὰ τί οὐκ ἀπερχόμεθα ἤδη; καὶ μεταξὺ γὰρ πλέοντες[1] τὰ λοιπὰ γελασόμεθα οἰμώζοντας αὐτοὺς ὁρῶντες. ΚΛΩΘΩ. ἔμβαινε, ἵνα καὶ ἀνιμήσηται[2] ὁ πορθμεὺς τὸ ἀγκύριον. ΧΑΡΩΝ. οὗτος[3] ποῖ φέρῃ; πλῆρες ἤδη τὸ σκάφος· αὐτοῦ περίμενε· ἐς αὔριον ἕωθέν[4] σε διαπορθμεύσομεν. ΜΙΚ. ἀδικεῖς, ὦ Χάρων! ἕωλον[5] ἤδη νεκρὸν ἀπολιμπάνων· ἀμέλει· γράψομαί σε παρανόμων[6] ἐπὶ τοῦ Ῥαδαμάνθυος. οἴμοι τῶν κακῶν![7] ἤδη πλέουσιν· ἐγὼ δὲ μόνος ἐνταῦθα περιλελείψομαι·[8] καίτοι τί οὐ διανήχομαι[9] κατ' αὐτούς;[10] οὐ γὰρ δέδια μὴ ἀπαγορεύσας[11] ἀποπνιγῶ ἤδη τεθνεώς·[11] ἄλλως τε οὐδὲ τὸν ὀβολὸν ἔχω τὰ πορθμία καταβαλεῖν.[12] ΚΛΩΘΩ. τί τοῦτο; περίμενον, ὦ Μίκυλλε· οὐ θέμις οὕτω σε διελθεῖν. ΜΙΚ. καὶ μὴν ἴσως ὑμῶν καὶ προκαταχθήσομαι. ΚΛΩΘΩ. μηδαμῶς[10] ἀλλὰ προσελάσαντες ἀναλάβωμεν αὐτόν· καὶ σύ, ὦ Ἑρμῆ! συνανάσπασον. ΧΑΡ. ποῦ νῦν καθεδεῖται; μεστὰ γὰρ πάντα, ὡς ὁρᾷς. ΕΡΜ. ἐπὶ τοὺς ὤμους, εἰ δοκεῖ, τοῦ τυράννου. ΚΛΩΘΩ. καλῶς ὁ Ἑρμῆς ἐνενόησεν· ἀνάβαινε οὖν, καὶ τὸν τένοντα[13] τοῦ ἀλετηρίου[14] καταπάτει· ἡμεῖς δ' εὐπλοῶμεν![15] ΚΥΝ. ὦ Χάρων! καλῶς ἔχει σοι τὰς ἀληθείας[16] ἐντεῦθεν εἰπεῖν· ἐγὼ τὸν ὀβολὸν μεν οὐκ ἂν ἔχοιμι δοῦναί σοι καταπλεύσας·[11] πλέον γὰρ οὐδέν ἐστι τῆς πήρας, ἣν ὁρᾷς, καὶ τούτου τοῦ ξύλου· τἄλλα δέ, ἢν ἀντλεῖν ἐθέλῃς, ἕτοιμος,[17] καὶ πρόσκωπος εἶναι· μέμψῃ δὲ οὐδέν, ἢν εὐῆρες[18] καὶ καρτερόν μοι ἐρετμὸν δῷς μόνον. ΧΑΡ. ἔρεττε· καὶ τουτὶ γὰρ ἱκανὸν παρὰ σοῦ λαβεῖν. ΚΥΝ. ἦ καὶ ὑποκελεῦσαι δεήσει; ΧΑΡ. νὴ Δί', ἤνπερ εἰδῇς κέλευσμά τι τῶν ναυτικῶν.[19] ΚΥΝ. οἶδα καὶ πολλά, ὦ Χάρων! ἀλλ' ὁρᾷς, ἀντεπηχοῦσιν οὗτοι δακρύοντες· ὥστε ἡμῖν τὸ ᾆσμα ἐπιταραχθήσεται. ΠΛ. οἴμοι τῶν κτημάτων! ΑΛΛ. οἴμοι τῶν ἀγρῶν! ΑΛΛ. ὀττοτοῖ τὴν οἰκίαν οἵαν ἀπέλιπον! ΑΛΛ. ὅσα τάλαντα ὁ κληρονόμος σπαθήσει[20] παραλαβών! ΑΛΛ. αἰαῖ τῶν νεογνῶν[21] μου παιδίων! ΑΛΛ. τίς ἄρα τὰς ἀμπέλους τρυγήσει,[22] ἃς πέρυσιν[23] ἐφυτευσάμην;[24] ΕΡΜ. Μίκυλλε! σὺ δ' οὐδὲν οἰμώζεις; καὶ μὴν οὐ θέμις ἀδακρυτὶ[25] διαπλεῦσαί τινα. ΜΙΚ. ἄπαγε· οὐδέν ἐστιν ἐφ' ὅτῳ οἰμώξομαι εὐπλοῶν. ΕΡΜ. ὅμως κἂν[10] μικρόν τι, ὡς τὸ ἔθος, ἐπιστέναξον. ΜΙΚ. οἰμώξομαι τοίνυν, ἐπειδή σοι, ὦ Ἑρμῆ! δοκεῖ. οἴμοι τῶν καττυμάτων![26] οἴμοι τῶν κρηπίδων τῶν παλαιῶν! ὀττοτοῖ τῶν σαθρῶν[27] ὑποδημάτων! οὐκ ἔτι ὁ κακοδαίμων ἕωθεν ἐς ἑσπέραν ἄσιτος διαμενῶ, οὐδὲ τοῦ χειμῶνος ἀνυπόδετός τε καὶ ἡμίγυμνος περινοστήσω, τοὺς ὀδόντας ὑπὸ τοῦ κρύους συγκροτῶν. τίς ἄρα μου τὴν σμίλην ἕξει καὶ τὸ κεντητήριον; ἱκανῶς τεθρήνηται· σχεδὸν δὲ ἤδη καὶ καταπεπλεύκαμεν.

2. In brief notes upon the words and phrases numbered above, elucidate the construction of μεταξὺ πλέοντες, of γράψομαί σε παρανόμων (explaining also the forensic allusion here), of οἴμοι τῶν κακῶν and analogous exclamations, of καταβαλεῖν, of κέλευσμά τι τῶν ναυτικῶν,—account for the state of περιλελείψομαι, the mode of εὐπλοῶμεν, the number of τὰς ἀληθείας, the case of οὗτος, the usage of κατ' αὐτούς (from which distinguish κατ' αὐτῶν),—supply the ellipses after μηδαμῶς, ἕτοιμος, κἂν μικρόν τι,—discriminate the force of aorist participles, like ἀπαγορεύσας and καταπλεύσας, from that of perfect participles like τεθνεώς,—state clearly the derivation or composition of ἕωθεν, ἕωλον, τένοντα, ἀλετηρίου, εὐῆρες, νεογνῶν, καττυμάτων, σαθρῶν, πέρυσιν, ἀδακρυτί, ἀμέλει, σπαθήσει, τρυγήσει, διανήχομαι, ἐφυτευσάμην, ἀνιμήσηται.

[Papers on Euripides and Xenophon not reprinted.]

Appendix, No. 8.

Scholarship Examinations

LATIN.—*Examiner, Rev. Professor Reichel.*

To be re-translated into Latin.

Then at length Titurius, as was natural, he having made no previous provision, began to bustle about, to run hither and thither, and to arrange his cohorts; doing however these very things timorously, and so that every resource seemed to fail him: as is mostly the case with those who are compelled to deliberate in the thick of the action. But Cotta, who had expected that these things might take place on the march and on this account had not advised setting out, was wanting in no respect to the general safety, and discharged the duty at once of a general in addressing and encouraging the troops, and of a common soldier in fighting. And as by reason of the length of the line of march they could not easily visit all parts of it and provide what ought to be done in each place, the generals ordered proclamation to be made that the soldiers should leave the baggage and halt in a compact body. A plan which, although it is not to be blamed in such a case, yet it proved in this instance inconvenient: for it both diminished the hopes of our men and made the enemies more eager for fighting, because its adoption seemed to imply the greatest fear and desperation. Besides this it necessarily happened that the soldiers quitted their standards in numbers, each hastening to seek out and carry off from the baggage what he held most precious, so that outcries and lamentations resounded everywhere. But the barbarians on the other hand were by no means wanting in judgment: for their generals ordered proclamation to be made through the whole army that no one should leave his place: that whatever the Romans had abandoned was their booty and was kept for them: that accordingly they should consider everything to depend upon victory. They were equal to us in action, both in numbers and in valor. Yet our men, though they were abandoned by their general and by fortune, still placed their whole hope of safety in their courage, and as often as each cohort made an onset, so often did a great number of the enemy fall in the quarter attacked. —CÆSAR.

HISTORY AND THE ENGLISH LANGUAGE.—*Examiner, Professor Craik.*

1. State briefly the accounts commonly given of Cecrops, of Danaus, of Pelops (with his descendants), and of Cadmus.

2. Give in order and in connexion the leading events of Athenian History from Solon to Pericles.

3. Sketch rapidly the life and campaigns of Alexander the Great.

4. Write an Essay on one of the following subjects:—

Homer and Virgil;
Demosthenes and Cicero;
The Greeks and the Romans;
The English and the French.

(The Essay must be written by every competitor).

There will also be a *viva voce* Examination on the Outlines of English History.

SECOND YEAR STUDENTS.

GREEK.—*Examiner, Professor MacDouall.*

I.—Translate accurately the following passage from the *Phaedros* of PLATON, and subjoin any notes which you may consider suitable:—

Τὰ μέγιστα τῶν ἀγαθῶν ἡμῖν γίγνεται διὰ μανίας, θείᾳ μέντοι δόσει διδομένης. Ἥ τε γὰρ δὴ ἐν Δελφοῖς προφῆτις αἵ τ᾽ ἐν Δωδώνῃ ἱέρειαι μανεῖσαι μὲν πολλά δὴ καὶ καλὰ ἰδίᾳ τε καὶ δημοσίᾳ τὴν Ἑλλάδα εἰργάσαντο, σωφρονοῦσαι δὲ βραχέα ἢ οὐδέν. καί, ἐὰν δὴ λέγωμεν Σίβυλλάν τε καὶ ἄλλους, ὅσοι μαντικῇ χρώμενοι ἐνθέῳ πολλὰ δὴ πολλοῖς προλέγοντες εἰς τὸ μέλλον ὤρθωσαν, μηκύνοιμεν ἂν δῆλα παντὶ λέγοντες. . . . ἀλλὰ μὴν νόσων γε καὶ πόνων τῶν μεγίστων, ἃ δὴ παλαιῶν ἐκ μηνιμάτων ποθέν, ἔν τισι τῶν γενῶν ἡ μανία ἐγγενομένη καὶ προφητεύσασα οἷς ἔδει ἀπαλλαγὴν εὕρετο, καταφυγοῦσα πρὸς θεῶν εὐχάς τε καὶ λατρείας, ὅθεν δὴ καθαρμῶν τε καὶ τελετῶν τυχοῦσα ἐξάντη ἐποίησε τὸν ἑαυτῆς ἔχοντα πρός τε τὸν παρόντα καὶ τὸν ἔπειτα χρόνον, λύσιν τῷ ὀρθῶς μανέντι τε καὶ κατασχομένῳ τῶν παρόντων κακῶν εὑρομένη. τρίτη δὲ ἀπὸ Μουσῶν κατοκωχή τε καὶ μανία, λαβοῦσα ἁπαλὴν καὶ ἄβατον ψυχήν, ἐγείρουσα καὶ ἐκβακχεύουσα, κατά τε ᾠδὰς καὶ κατὰ τὴν ἄλλην ποίησιν μυρία τῶν παλαιῶν ἔργα κοσμοῦσα, τοὺς ἐπιγιγνομένους παιδεύει. ὃς δ᾽ ἂν ἄνευ μανίας Μουσῶν ἐπὶ ποιητικὰς θύρας ἀφίκηται, πεισθεὶς ὡς ἄρα ἐκ τέχνης ἱκανὸς ποιητὴς ἐσόμενος, ἀτελὴς αὐτός τε, καὶ ἡ ποίησις ὑπὸ τῆς τῶν μαινομένων ἡ τοῦ σωφρονοῦντος ἠφανίσθη. τοσαῦτα μέν σοι καὶ ἔτι πλείω ἔχω μανίας γιγνομένης ἀπὸ θεῶν λέγειν καλὰ ἔργα. ὥστε τοῦτό γε αὐτὸ μὴ φοβώμεθα, μηδέ τις ἡμᾶς λόγος θορυβείτω δεδιττόμενος, ὡς πρὸ τοῦ κεκινημένου τὸν σώφρονα δεῖ προαιρεῖσθαι φίλον. ἀλλα τόδε πρὸς ἐκείνῳ δείξας φερέσθω τὰ νικητήρια, ὡς οὐκ ἐπ᾽ ὠφελείᾳ ὁ ἔρως τῷ ἐρῶντι καὶ τῷ ἐρωμένῳ ἐκ θεῶν ἐπιπέμπεται. ἡμῖν δὲ ἀποδεικτέον αὖ τοὐναντίον, ὡς ἐπ᾽ εὐτυχίᾳ τῇ μεγίστῃ παρὰ θεῶν ἡ τοιαύτη μανια δίδοται. ἡ δὲ δὴ ἀπόδειξις ἔσται δεινοῖς μὲν ἄπιστος, σοφοῖς δὲ πιστή.

II.—1. Translate in Attic Prose the following passage:

Hac oratione adducti inter se fidem et iusiurandum dant, et, regno occupato, per tris potentissimos ac firmissimos populos totius Galliae sese potiri posse sperant. ea res ut est Helvetiis per indicium enuntiata, moribus suis Orgetorigem ex vinculis causam dicere coegerunt: damnatum poenam sequi oportebat, ut igni cremaretur. die constituta causae dictionis, Orgetorix ad iudicium omnem suam familiam, ad hominum milia decem, undique coegit, et omnes clientes obaeratosque suos quorum magnum numerum habebat, eodem conduxit: per eos, ne causam diceret, se eripuit. quum civitas, ob eam rem incitata, armis ius suum exsequi conaretur, multitudinemque hominum ex agris magistratus cogerent, Orgetorix mortuus est: neque abest suspicio, ut Helvetii arbitrantur, quin ipse sibi mortem consciverit. post eius mortem nihilo minus Helvetii id, quod constituerant, facere conantur, ut e finibus suis exeant. omnibus rebus ad profectionem comparatis, diem dicunt, qua die ad ripam Rhodani omnes conveniant.

2. Or else translate these lines, whether in Homeric Hexameters or in Trimeter Iambics:

O Odyseus! this in regard to thee[1] we by no means deem,[1] while looking on,
that thou art a deceiver[2] and a cheat[3], as[4] in great number
the black earth nurtures widely-scattered[5] men
contriving[6] [I ween[7]] falsehoods whence one would not look [for such].
But to thee belong[8] both grace[9] of words and also an honest heart within;[10]
and thy tale right deftly[11] didst thou tell, as when a minstrel [tells one],—
of all the Argives and of thine own self the doleful woes.
But come! say for me this, and distinctly tell it,—
whether thou beheldest any of thy godlike feres, who along with thyself
to Ilios sped[12] together and there encountered[13] doom.
Now, very long is this night—a termless one,[14] nor as yet is it time
to sleep within the hall: so do thou rehearse for me [thy] wondrous gestes.[15]
Even until heavenly[16] morn would I await,[17] while[18] thou for me
shouldst brook,[19] within [my] hall, to set forth[20] those woes of thine.

[1] σὲ ἐΐσκομεν. [2] ἠπεροπεύς. [3] ἐπίκλοπος. [4] οἷά τε. [5] πολυσπερής. [6] ἀρτύνων. [7] The rudimentary particle which was expanded into τοι. [8] ἔπι (without ἐστί). [9] μορφή. [10] ἔνι. [11] ἐπισταμένως. [12] ἕπεσθαι. [13] ἐπισπεῖν. [14] ἀθέσφατος. [15] θέσκελα ἔργα. [16] δῖα. [17] ἀνασχέσθαι. [18] ὅτε. [19] τλῆναι. [20] μυθήσασθαι.

[Other papers not reprinted].

ENGLISH LANGUAGE.—*Examiner, Professor Craik.*

1. State when, and whence, and by whom the oldest known form of the English Language appears to have been introduced into Britain.

2. Describe the linguistic character of this original English, both in its vocabulary and in its grammar.

APPENDIX, No. 8.

Scholarship Examinations

3. Assign its place in the family or system of what have been called the Indo-European Languages.

4. Give some examples of words apparently of Celtic origin still to be found in the English Language.

5. Explain what are the three ingredients of our existing English, which have been designated the Latin of the First, of the Second, and of the Third Periods; and give examples of each.

6. Give the dates of the first recorded appearance of the Danes in England, of their first settlement in Northumbria, of their extended acquisition of territory by treaty with Alfred the Great, of their conquest of the entire realm, and of the cessation of their sovereignty.

7. Give an account of the specimens that have come down to us of the early Anglian dialect of Northumbria, with their dates, and state what is the most remarkable of the peculiarities by which that form of our ancient language is found to be distinguished.

8. Explain what was the first effect produced upon the English Language by the Norman Conquest.

9. Explain what was the second great change in the language which may be traced to that event, and when it appears to have commenced.

10. Write a short Essay on the natural progress of a Language from rudeness to refinement.

MODERN LANGUAGES.—*Examiner, Dr. Frings.*

Die Natur gab den Menſchen die Thränen und die Rede, ſie von den Thieren zu unterſcheiden. Die Thränen ſollen ſie ermahnen, freundlich und mild zu ſeyn gegen alles was lebendigen Athem und Gefühl hat; die Rede ſoll ſie erinnern, daß durch Herrſchaft, Kühnheit, Verſtand, ſie den Göttern gleichen, ſie ſoll ſie erinnern an ihre Würde und ihre Kraft.

Rede, heiliges Geſchenk der Natur, ohne dich würden wir ſtumm und lieblos neben einander hinſtarren, wie die Thiere des Waldes und die Beſtien der Wüſte. Ohne dich hätte nie ein Hermes und Archimedes den Himmel gemeſſen, kein Colomb und Cook die Erde umſegelt, kein Homer das Leben, das Schickſal, die Götter beſungen. Ich muß reden, das Herz zu erleichtern. Durch die Augen geht zart zurück, was zart kam.

Ich war einſt jung und bin ein Mann geworden ohne Männer. Glückliche Zeit, als die fromme Mutter mich leſen lehrte und ich die fünf Bücher Moſes und die luſtigeren der Könige las! Bei den Heerden meiner Kühe, um die Teiche in den Büſchen lebte ich mit den Erzvätern des Alterthums und die ewigen Geſchichten der Fabel wurden wieder wirkliche Geſchichten.

Arendt.

Marie était entourée de ses serviteurs consternés et inconsolables, lorsqu'on vint l'avertir que le lendemain serait le dernier jour de sa vie; résignée depuis longtemps à une mort prochaine que la religion lui avait appris à regarder comme le terme de ses souffrances, elle reçut sans émotion cette nouvelle fatale, et défendit à ses domestiques de laisser éclater leur sanglots; mais comme la plupart d'entre eux ne pouvaient retenir leurs larmes: "Au lieu de pleurer, leur dit-elle avec douceur, vous devriez plutôt vous réjouir; ne savez-vous pas tout ce que j'ai souffert sur la terre? et la mort qui m'est annoncée ne doit-elle pas mettre fin à tous mes maux?" Après ces paroles elle les ranvoya, et s'enfermant avec deux de ses femmes qu'elle préférait à toutes les autres elle passa la nuit à écrire à son fils et au pape; et lorsqu' enfin, accablée de fatigue, elle se jeta sur son lit, on la vit prier Dieu avec ferveur sans que le sommeil vint un seul instant suspendre les douleurs de cette nuit fatale.—FLEURY.

As soon as the lady had ordered coffee, fruit, and cakes, for the refreshment of her guests, she retired to her apartment to peruse the letter which explained the motive of their visit, and she was not a little surprised at finding that the father of the young ladies had accepted the post of governor to one of the East India islands; and that, not knowing whether the situation would be advantageous for young women, he had resolved to leave his daughters under the care of their aunt for some time at least. This intelligence both astonished and pained the old dame, who began to apprehend that the accounts she had heard of her brother-in-law's extravagance, since the death of his amiable wife, were but too well founded, and imagined that he had expatriated himself in order to retrieve a fortune which he could not have lost but in gambling.

1. State what you know respecting the flexibility of the *Past Participle*, and give some examples of *active*, *transitive*, *reflective*, and *neuter* verbs.

2. How many ways are there of translating the preposition "*With*" into French? Give examples.

3. When does the Adjective generally *follow* the Substantive in French?

4. What difference is there between "*Je les ai vu bâtir*," and "*Je les ai vues bâtir?*"

5. Decline the *Relative* pronoun *Qui*, and the *Interrogative* pronoun *Qui*.

6. What difference is there between "*les yeux*" and "*les œils;*" "*les cieux*" and "*les ciels?*"

7. What difference is there between "*le mémoire*" and "*la mémoire;*" "*le livre*" and "*la livre?*"

8. Name as many of the verbs as you know to take the auxiliary *Etre* in French, while they require the auxiliary *To have* in English.

9. How would you translate the isolated words: "*Plus de plaintes!*"

10. When is the Subjunctive mood of the verb applied in French?

THIRD YEAR STUDENTS.

GREEK.—*Examiner, Professor Mac Douall.*

1.—1. Translate accurately the following passage from Thucydides:—

Ἐπειδὴ δὲ οἵ τε Ἀθηναίων τύραννοι καὶ οἱ ἐκ τῆς ἄλλης Ἑλλάδος ἐπὶ πολὺ καὶ πρὶν τυραννευθείσης οἱ πλεῖστοι καὶ τελευταῖοι, πλὴν τῶν ἐν Σικελίᾳ, ὑπὸ Λακεδαιμονίων κατελύθησαν, (ἡ γὰρ Λακεδαίμων μετὰ τὴν κτίσιν τῶν νῦν ἐνοικούντων αὐτὴν Δωριέων ἐπὶ πλεῖστον ὧν ἴσμεν χρόνον στασιάσασα ὅμως ἐκ παλαιοτάτου καὶ εὐνομήθη καὶ ἀεὶ ἀτυράννευτος ἦν· ἔτη γάρ ἐστι μάλιστα τετρακόσια καὶ ὀλίγῳ πλείω ἐς τὴν τελευτὴν τοῦδε τοῦ πολέμου, ἀφ' οὗ Λακεδαιμόνιοι τῇ αὐτῇ πολιτείᾳ χρῶνται, καὶ δι' αὐτὸ δυνάμενοι καὶ τὰ ἐν ταῖς ἄλλαις πόλεσι καθίστασαν·) μετὰ δὲ τὴν τῶν τυράννων κατάλυσιν ἐκ τῆς Ἑλλάδος οὐ πολλοῖς ἔτεσιν ὕστερον καὶ ἡ ἐν Μαραθῶνι μάχη Μήδων πρὸς Ἀθηναίους ἐγένετο. δεκάτῳ δὲ ἔτει μετ' αὐτὴν αὖθις ὁ Βάρβαρος τῷ μεγάλῳ στόλῳ ἐπὶ τὴν Ἑλλάδα δουλωσόμενος ἦλθε. καὶ μεγάλου κινδύνου ἐπικρεμασθέντος, οἵ τε Λακεδαιμόνιοι τῶν ξυμπολεμησάντων Ἑλλήνων ἡγήσαντο δυνάμει προύχοντες, καὶ οἱ Ἀθηναῖοι, ἐπιόντων τῶν Μήδων, διανοηθέντες ἐκλιπεῖν τὴν πόλιν καὶ ἀνασκευασάμενοι ἐς τὰς ναῦς ἐσβάντες ναυτικοὶ ἐγένοντο. κοινῇ δὲ ἀπωσάμενοι τὸν βάρβαρον ὕστερον οὐ πολλῷ διεκρίθησαν πρός τε Ἀθηναίους καὶ Λακεδαιμονίους οἵ τε ἀποστάντες βασιλέως Ἕλληνες καὶ οἱ ξυμπολεμήσαντες. δυνάμει γὰρ ταῦτα μέγιστα διεφάνη· ἴσχυον γὰρ οἱ μὲν κατὰ γῆν, οἱ δὲ ναυσί. καὶ ὀλίγον μὲν χρόνον ξυνέμεινεν ἡ ὁμαιχμία, ἔπειτα δὲ διενεχθέντες οἱ Λακεδαιμόνιοι καὶ Ἀθηναῖοι ἐπολέμησαν μετὰ τῶν ξυμμάχων πρὸς ἀλλήλους· καὶ τῶν ἄλλων Ἑλλήνων εἴ τινές που διασταῖεν, πρὸς τούτους ἤδη ἐχώρουν. ὥστε ἀπὸ τῶν Μηδικῶν ἐς τόνδε ἀεὶ τὸν πόλεμον, τὰ μὲν σπενδόμενοι, τὰ δὲ πολεμοῦντες ἢ ἀλλήλοις ἢ τοῖς ἑαυτῶν ξυμμάχοις ἀφισταμένοις, εὖ παρεσκευάσαντο τὰ πολέμια καὶ ἐμπειρότεροι ἐγένοντο μετὰ κινδύνων τὰς μελέτας ποιούμενοι. καὶ οἱ μὲν Λακεδαιμόνιοι οὐχ ὑποτελεῖς ἔχοντες φόρου τοὺς ξυμμάχους ἡγοῦντο, κατ' ὀλιγαρχίαν δὲ σφίσιν αὐτοῖς μόνον ἐπιτηδείως ὅπως πολιτεύσουσι θεραπεύοντες, Ἀθηναῖοι δὲ ναῦς τε τῶν πόλεων τῷ χρόνῳ παραλαβόντες, πλὴν Χίων καὶ Λεσβίων, καὶ χρήματα τοῖς πᾶσι τάξαντες φέρειν. καὶ ἐγένετο αὐτοῖς ἐς τόνδε τὸν πόλεμον ἡ ἰδία παρασκευὴ μείζων ἢ ὡς τὰ κράτιστά ποτε μετὰ ἀκραιφνοῦς τῆς ξυμμαχίας ἤνθησαν.

2. Give the names, and briefly describe the functions, of the more important magistracies at Athens and at Sparta, distinguishing those held by individuals from those distributed amongst various persons,—those held for life from such as were temporary,—and any which were hereditary from those conferred by suffrage or by lot.

3. (*a*) Name the three original tribes of Dorians; and (*b*) the King who substituted five local tribes in Sparta.

Appendix, No. 8.

Scholarship Examinations

4. (*a*) Mention some facts favourable to the traditional statement, that the Spartan *Basileis* were of Non-Dorian descent; and (*b*) notice especially the relations which are found to have subsisted between them and the *Ephoroi* of the Dorian noblesse.

5. (*a*) Name the four old Ionian tribes in Athens as recognised by Solōn, and state how many local tribes were substituted by Cleisthenēs. (*b*) Sketch the mode by which Solon erected a timocracy in place of an oligarchy, and also that by which Cleisthenēs rendered the government democratic.

II.—Translate also this passage from the *Timaeus* of Platon, subjoining any brief notes which you may consider suitable:—

Ἀκούοιτ' ἂν ἤδη τὰ μετὰ ταῦτα περὶ τῆς πολιτείας, ἣν διήλθομεν, οἷόν τι πρὸς αὐτὴν πεπονθὼς τυγχάνω. προσέοικε δὲ δή τινί μοι τοιῷδε τὸ πάθος, οἷον εἴ τις ζῷα καλά που θεασάμενος, εἴτε ὑπὸ γραφῆς εἰργασμένα εἴτε καὶ ζῶντα ἀληθινῶς, ἡσυχίαν δὲ ἄγοντα, εἰς ἐπιθυμίαν ἀφίκοιτο θεάσασθαι κινούμενά τε αὐτὰ καί τι τῶν τοῖς σώμασι δοκούντων προσήκειν κατὰ τὴν ἀγωνίαν ἀθλοῦντα. ταὐτὸν καὶ ἐγὼ πέπονθα πρὸς τὴν πόλιν, ἣν διήλθομεν· ἡδέως γὰρ ἄν του λόγῳ διεξιόντος ἀκούσαιμ' ἄν, ἄθλους οὓς πόλις ἀθλεῖ, τούτους αὐτὴν ἀγωνιζομένην πρὸς πόλεις ἄλλας, πρεπόντως εἰς πόλεμον ἀφικομένην καὶ ἐν τῷ πολεμεῖν τὰ προσήκοντα ἀποδιδοῦσαν τῇ παιδείᾳ καὶ τροφῇ κατά τε τὰς ἐν τοῖς ἔργοις πράξεις καὶ κατὰ τὰς ἐν τοῖς λόγοις διερμηνεύσεις πρὸς ἑκάστας τῶν πόλεων. ταῦτ' οὖν, ὦ Κριτία καὶ Ἑρμόκρατες, ἐμαυτοῦ μὲν αὐτὸς κατέγνωκα μή ποτ' ἂν δυνατὸς γενέσθαι τοὺς ἄνδρας καὶ τὴν πόλιν ἱκανῶς ἐγκωμιάσαι. καὶ τὸ μὲν ἐμὸν οὐδὲν θαυμαστόν· ἀλλὰ τὴν αὐτὴν δόξαν εἴληφα καὶ περὶ τῶν πάλαι γεγονότων καὶ τῶν νῦν ὄντων ποιητῶν, οὔτε τὸ ποιητικὸν ἀτιμάζων γένος, ἀλλὰ παντὶ δῆλον, ὡς τὸ μιμητικὸν ἔθνος, οἷς ἂν ἐντραφῇ, ταῦτα μιμήσεται ῥᾷστα καὶ ἄριστα, τὸ δ' ἐκτὸς τῆς τροφῆς ἑκάστοις γιγνόμενον χαλεπὸν μὲν ἔργοις, ἔτι δὲ χαλεπώτερον λόγοις εὖ μιμεῖσθαι. τὸ δὲ τῶν σοφιστῶν γένος αὖ πολλῶν μὲν λόγων καὶ καλῶν ἄλλων μάλα ἔμπειρον ἥγημαι, φοβοῦμαι δὲ μή πως, ἅτε πλανητὸν ὂν κατὰ πόλεις οἰκήσεις τε ἰδίας οὐδαμῇ διῳκηκός, ἄστοχον ἅμα φιλοσόφων ἀνδρῶν ᾖ καὶ πολιτικῶν, ὅσα ἂν οἷά τε ἐν πολέμῳ καὶ μάχαις πράττοντες ἔργῳ καὶ λόγῳ προσομιλοῦντες ἑκάστοις πράττοιεν καὶ λέγοιεν.

[Other papers not reprinted.]

LATIN.—*Examiner, Rev. Professor Reichel.*

To be translated into Latin prose:—

There are two ways in which men may form their notions and opinions concerning the mind, and concerning its powers and operations. The first is the only way that leads to truth: but it is narrow and rugged, and few have entered upon it. The second is broad and smooth and hath been much beaten, not only by the vulgar but even by philosophers: it is sufficient for common life and is well adapted for the purposes of the orator and poet, but in philosophical disquisitions concerning the mind it leads to error and delusion.

We may call the first of these ways the way of reflection. When the operations of the mind are exerted we are conscious of them; and it is in our power to attend to them and to reflect upon them until they become familiar objects of thought. This is the only way in which we can form just or accurate notions of these operations. But this attention and reflection is so difficult to man, surrounded on all hands by external objects which constantly solicit his attention, that it has been very little practised even by philosophers. In the course of this inquiry we have had many occasions to show how little attention has been given to the most familiar operations of the senses.

The second and the most common way in which men form their opinions concerning the mind and its operations we may call the way of analogy. There is nothing in the course of nature so singular, but we can find some resemblance, or at least some analogy, between it and other things with which we are acquainted. The mind naturally delights in hunting after such analogies, and attends to them with pleasure. From them poetry and wit derive a great part of their charms; and eloquence not a little of its persuasive force.—Reid.

To be translated into Latin hexameters:—

Thrones and Imperial Powers! offspring of heaven!
Ethereal virtues! or these titles now
Must we renounce, and changing style, be called
Princes of Hell? for so the popular vote
Inclines, here to continue, and build up here
A growing empire: doubtless! while we dream
And know not that the King of Heaven hath doomed
This place our dungeon, not our safe retreat
Beyond his potent arm, to live exempt
From Heaven's high jurisdiction, in new league
Banded against his throne, but to remain
In strictest bondage, though thus far removed
Under the inevitable curb, reserved
His captive multitude: for he, be sure,
In height or depth, still first and last will reign
Sole king, and of his kingdom lose no part
By our revolt: but over Hell extend
His empire, and with iron sceptre rule
Us here, as with his golden those in Heaven.

Milton.

MODERN LANGUAGES.—*Examiner, Dr. Frings.*

Drako hatte ſeinen Auftrag ſehr ſchlecht erfüllt, und anſtatt zu nützen, ſchadeten ſeine Geſetze. Weil ſie nämlich nicht befolgt werden konnten, und doch keine andere ſogleich da waren, ihre Stelle zu erſetzen, ſo war es eben ſo viel, als wenn Athen gar kein Geſetz gehabt hätte, und die traurigſte Anarchie riß ein

Damals war der Zuſtand des athenienſiſchen Volks äußerſt zu beklagen Eine Klaſſe des Volks beſaß Alles, die andere hingegen gar nichts; die Reichen unterdrückten und plünderten aufs unbarmherzigſte die Armen Es entſtand eine unermeßliche Scheidewand zwiſchen beiden Die Noth zwang die ärmeren Bürger, zu den Reichen ihre Zuflucht zu nehmen, zu eben den Blutigeln, die ſie ausgeſogen hatten; aber ſie fanden nur eine grauſame Hülfe bei dieſen Sie waren dahin gebracht, ihre eigenen Kinder als Sklaven zu verkaufen, und endlich, als auch dieſe Zuflucht erſchöpft war, borgten ſie auf ihren eigenen Leib, und mußten ſich gefallen laſſen, von ihren Kreditoren als Sklaven verkauft zu werden. Gegen dieſen abſcheulichen Menſchenhandel war noch kein Geſetz in Attika gegeben, und nichts hielt die grauſame Habſucht der reichen Bürger in Schranken. Schiller.

Translate into German:—

My dear Friend,—Following your good example, I lay before me a sheet of my largest paper. It was this moment fair and unblemished, but I have begun to blot it, and having begun, am not likely to cease till I have spoiled it. I have sent you many a sheet, that in my judgment of it, has been very unworthy of your acceptance; but my conscience was in some measure satisfied by reflecting, that, if it were good for nothing, at the same time it cost you nothing, except the trouble of reading it. But the case is altered now. You must pay a solid price for frothy matter; and though I do not absolutely pick your pocket, yet you lose your money, and as the saying is, are never the wiser.

My green-house is never so pleasant as when we are just upon the point of being turned out of it. The gentleness of the autumnal suns, and calmness of this latter season, make it a much more agreeable retreat than we ever find it in the summer. I am now sitting with all the windows and the door wide open, and am regaled with the scent of every flower, in a garden as full of flowers as I have known how to make it.

Translate into French:—

In the city of Nancy, in Lorraine, a district in the East of France, bordering on Germany, some time ago lived Hans Keller, a German by birth, who after having spent some part of his life as a pedlar, settled, with his wife and his little daughter. The family was obscure, and had few friends, but those who knew them respected them for their industry. By many they would have been considered poor; but *poor* is a wrong term to apply to persons who work for their living, and owe no man anything.

Hans, as a German, knew the value of education, and he accordingly took care to give his daughter a little schooling, and in order to be able to afford this, he actually gave up smoking—a great sacrifice for a German. "Who knows," said he to his wife, "but our daughter may one day be a credit to us. At all events, if she is not educated, she must be a drudge all the days of her existence, and I am determined to give her a chance of being something better than I am." Hans accordingly had his daughter taught reading and writing at school, and he himself took pains to instruct her in arithmetic. He also spoke to her in German, so that, when only eight years of age, the little girl spoke and read German and French with equal fluency.

Who are the principal French writers of the 18th century, and which are their chief works?

State all that you know of the tendency of both writers.

How do you account for the 17th century having turned out to be the so-called golden age of French literature?

Name as many writers as you know of that golden age, and mention some of their most important works.

In what state did the 18th century find French literature.

Translate:—

Monsieur, ce n'est pas parceque je suis son père; mais je puis dire que j'ai sujet d'être content de lui, et que tous ceux qui le voient en parlent comme d'un garçon qui n'a point de méchanceté. Il n'a jamais eu l'imagination bien vive, ni ce feu d'esprit qu'on remarque dans quelques-uns; mais c'est par là que j'ai toujours bien auguré de sa judiciaire, qualité requise pour l'exercise de notre art. Lorsqu'il était petit, il n'a jamais été ce qu'on appelle mièvre et éveillé; on le voyait toujours doux, paisible et taciturne; ne disant jamais mot, et ne jouant jamais à tous ces petits jeux que l'on nomme enfantins. On eut toutes les peines du monde à lui apprendre à lire; et il avait neuf ans qu'il ne connaissait pas encore ses lettres. Bon, disais-je en moi-même, les arbres tardifs sont ceux qui portent les meilleurs fruits. On grave sur le marbre bien plus malaisément que sur le sable, mais les choses y sont conservées bien plus longtemps. Lorsque je l'envoyai au Collége, il trouva de la peine, mais il se roidissait contre les difficultés; et ses régents se louaient toujours à moi de son assiduité et de son travail.—MOLIERE.

SCIENCE SCHOLARSHIPS.

FIRST YEAR STUDENTS.

MATHEMATICS.—*Examiner, Professor Tait.*

ALGEBRA.

1. Add the fractions:

$$\frac{b+c}{(x-a)(a-b)(a-c)},\ \frac{a+c}{(x-b)(b-a)(b-c)}\ \text{and}$$
$$\frac{a+b}{(x-c)(c-a)(c-b)},\ \text{and find the } G.C.M. \text{ of}$$
$$15x^4+10x^3y+4x^2y^2+6xy^3-3y^4 \text{ and}$$
$$6x^3+19x^2y+8xy^2-5y^3.$$

2. Assuming that $x^p x^q = x^{p+q}$, show that x^p can be interpreted for the cases p fractional, and p negative. What is meant by the assertion $x^0=1$ whatever be x?

3. Show that the remainder when x^m is divided by $x+1$ is ± 1 (m being an integer). When is $x^m \pm 1$ divisible by $x+1$? Prove your result by actual multiplication.

4. Solve the equations:

(α) $x(x-1)(x-2)\left(\dfrac{3}{x}+\dfrac{2}{x-1}+\dfrac{1}{x-2}\right)=12,$

(β) $\left[\begin{array}{r}\dfrac{x}{y}+\dfrac{y}{x}=\dfrac{5}{2}\\ xy=18\end{array}\right].$

and show that if $\left\{\begin{array}{l}ax+by+cz=0\\ bx+cy+az=0\\ cx+ay+bz=0\end{array}\right\}$ then $a^3+b^3+c^3=3abc.$

5. A's watch goes too slow, and B's too fast. They are set together and after 24^h by A's, B's is 5^m in advance. If now A's gain twice as much as B's did, and B's lose half as much as A's did, they will be together in 24^h by B's. What is the actual time between the coincidences?

6. The digits of the square of $1,x$ are $1,y\,y+3$ and in that of $1,x+1$ they are $1,y+3,y$. Find x.

7. Show that if $\dfrac{a}{b}=\dfrac{c}{d}$ then whatever be $p,q,r,s,$

$$\frac{pa\pm qb}{ra\pm sb}=\frac{pc\pm qd}{rc\pm sd}.$$

8. Give a formula for the number of terms in a geometric series, when the 1st term, the common ratio, and the sum are given.

9. Define a Logarithm, and the Base of a system of Logarithms. Prove the rules for substituting addition of logarithms for multiplication of numbers, and division for extraction of roots.

10. Given $\log_{10}2=\cdot301030$ and $\log_{10}3=\cdot4771213$ find $\log_{10}48$, $\log_{10}\cdot000192$, $\log_3 8$ and $\log_{15}16$—and given $\log_{10}7\cdot0926=\cdot8508$, calculate the value of $\left(\dfrac{3^{19}}{2^{14}}\right)$.

TRIGONOMETRY, &c.

1. Similar triangles are to each other in the duplicate ratio of their homologous sides.

2. The rectangle under the diagonals of a quadrilateral inscribed in a circle, is equal to the sum of those under the pairs of opposite sides.

3. The circle described through the middle points of the sides of a triangle, passes also through the feet of the perpendiculars from the angular points on the opposite sides.

4. Through a given point draw a straight line so that the rectangle under the segments intercepted by two given lines may equal a given rectangle.

5. Explain what is meant by the circular-measure of an angle, and define the number π. What would be to unit 25° the measure of an angle whose circular measure is $\cdot05$?

6. Define the sine, secant, and tangent of angle as lines in the unit circle. Trace their changes of sign and magnitude as the angle increases from 0 to 2π.

7. Construct geometrically the angle whose secant is $\sqrt{5}$, and that whose versed-sine is $\sqrt{2}$.

8. Prove the formulae:

(α) $\tan A.\cot A=1$.

(β) $\text{cosec.}^2A-\cot.^2A=1$.

(γ) $\cos(A-B)=\cos A\cos B+\sin A\sin B$, when

$$A>\frac{\pi}{2},\ B<\frac{\pi}{2},\ (A-B)<\frac{\pi}{2}.$$

(δ) $2\cos.^2A=1+\cos 2A$,

(ε) $\sqrt{\dfrac{1-\cos A}{1+\cos A}}=\tan\dfrac{A}{2}$.

9. In any plane triangle show that

$$\tan\frac{A}{2}=\sqrt{\frac{(s-b)(s-c)}{s(s-a)}},\ \text{where } 2s=a+b+c.$$

10. Given two sides and an angle opposite to one of them, find the other side and angles, and deduce from the formulae the two solutions in the ambiguous case, illustrating it by a figure.

11. Given three points and the angles subtended by their distances at a point in their plane—investigate the formulae for the distances of the latter from the former, showing, both geometrically and analytically, that there is only one solution.

SECOND YEAR STUDENTS.

MATHEMATICS.—*Examiner, Professor Tait.*

ALGEBRA AND TRIGONOMETRY.

1. Eliminate x y and z from $\left\{\begin{array}{l} ax+by+cz+d=0 \\ bx+cy+dz+a=0 \\ cx+dy+az+b=0 \\ dx+ay+bz+c=0 \end{array}\right\}$;

and find the relation between l, m, n if for *all* values of x, y, z

$$x^2+y^2+z^2-(lx+my+nz)^2$$
$$=(mx-ly)^2+(nx-lz)^2+(ny-mz)^2.$$

2. Find the coefficient of x^n in the expansion of $\frac{a+b+c-x}{(x-a)(x-b)(x-c)}$ in ascending powers of x.

3. Prove that if

$$(\varepsilon-1)-\frac{(\varepsilon-1)^2}{2}+\frac{(\varepsilon-1)^3}{3}-\text{\&c., to infinity}=1,$$

$$\text{then } \varepsilon^x=1+x+\frac{x^2}{1.2}+\text{\&c., to infinity.}$$

4. Apply the above to find the general term of

$$(a+b+c+\ldots\ldots+p)^m$$

when m is a positive integer.

5. Find the term in x^7 in $(1+2x^2+3x+x^5)^5$ and that in x^n in $(1+2x+3x^2+4x^3+\ldots\ldots)^m$.

6. If the sum of x terms of a series be $\frac{1}{x(x+1)}$, what is the xth term?

Apply the result to sum x terms of the series

$$\frac{1}{1.2.3},+\frac{1}{2.3.4}+\frac{1}{3.4.5}+\text{\&c.}$$

7. Given the apparent altitudes of a station as seen from three given stations in a horizontal line—investigate a formula for the actual altitude.

8. Prove De Moivre's Theorem for a positive integral index, and assuming it for any index, employ it to find all the values of x in $x^6+1=0$.

9. Investigate the expression for $\cos.^m\theta$ (when m is a positive integer) in terms of cosines of multiples of θ—and write it out fully in the cases of $\cos.^5\theta$ and $\cos.^7\theta$.

10. Finding all the values of θ in $\sin.\theta=0$, express $\sin.\theta$ in terms of its factors of the form $\theta+a$, and thence show how to calculate $\log.\sin.\frac{m\pi}{n}$ without first finding $\sin.\frac{m\pi}{n}$.

11. Sum the series:

$$\cos.\theta+e\cos2\theta+e^2\cos.3\theta+\ldots\ldots\ldots+e^{n-1}\cos n\theta.$$

Sum to infinity the series

$$\cos.\theta+\frac{\cos.2\theta}{2}+\frac{\cos3\theta}{3}+\ldots\ldots\ldots$$

and from the result find the sum to infinity of

$$\cos.\theta+\frac{\cos.3\theta}{3}+\frac{\cos5\theta}{5}+\text{\&c.}$$

12. If the sum of three angles be $\frac{\pi\surd}{2}$, the sum of the squares of their tangents is not less than unity.

CONIC SECTIONS.

[The propositions to be proved geometrically.]

1. Define the *Ellipse*. Show that the tangent at any point bisects the exterior angle between the focal distances, and employ this property to draw tangents to an ellipse from an external point—showing that two and only two can be drawn.

2. Show that the areas of the parallelograms which have two sides coincident with the asymptotes of an hyperbola, and the opposite vertex in the curve, are all equal.

3. Show that any closed section of a right circular cone satisfies the definition of the ellipse.

PLANE CO-ORDINATE GEOMETRY.

1. Explain the method of determining the position of a point in a plane by rectangular co-ordinates x and y—and show how an equation such as $f(x,y)=0$ represents a plane curve.

2. What is the meaning of the constants in $\frac{x}{a}+\frac{y}{b}=1$?

By means of a figure substitute for them the length of the perpendicular from the origin on the locus, and the angle it makes with the axis of x.

3. Find the equation to the straight line joining

$(x+y=2\,,\ x-3y=1)$ and $(x-y=5\,,\ 2y-3x=7)$.

4. Find the equation to a circle passing through two given points on the axis of x, and one on the axis of y,—and prove from it that the rectangles under the intercepts of perpendicular chords in a circle are equal.

5. Find the equation to the straight line joining the points of contact of tangents drawn from $(a,\ \beta)$ to $x^2+y^2=a^2$, and show that it is perpendicular to $\beta x-ay=0$.

DIFFERENTIAL CALCULUS.

1. Define a limit as depending upon one variable quantity,—and show that as x increases indefinitely $\left(1+\frac{1}{x}\right)^x$ has a limit $> 2 \angle 3$.

2. Define the differential coefficient of a function of one variable, and *directly from the definition* find those of

$$(1+x)^2,\ \sqrt{1-x^2},\ \frac{a+x}{b-x},\ \sin x \text{ and } \tan.^{-1}x.$$

THIRD YEAR STUDENTS.

MATHEMATICS.—*Examiner, Professor Tait.*

THEORY OF EQUATIONS, &c.

1. If $x^n+p_1x^{n-1}+\ldots\ldots\ldots+p_n=f(x)=0$, and if $f(a)$ and $f(b)$ have different signs—show that an odd number of real roots of $f(x)=0$ lies between a and b. Hence find when the roots of $x^2+ax+b=0$ are possible.

2. Find a limit to the positive roots of $f(x)=0$, and show that it can have but one positive root if $f(x)$ has but one change of sign.

3. Form the equation whose roots are the squares of the differences of the roots of $x^3+3x+5=0$, and thence deduce the number of its real roots.

4. Give Newton's method of approximating to a root of an equation, illustrate geometrically the case in which the approximation fails, and calculate to 4 decimals the root of $x^3+x-1=0$.

5. If the prime factors of n be p, q, r, &c., show that the roots of $x^n-1=0$ may be found from those of $x^p-1=0$, $x^q-1=0$ &c.

6. Approximate by continued fractions to the root of $x^3-3x-5=0$ which lies between 2 and 3, finding 4 convergents.

7. Show that the area of a spherical triangle is proportional to the excess of the sum of its angles over 180°.

8. In a spherical triangle show that $\frac{\sin A}{\sin a}=\ldots\ldots$ and find the value in terms of the sides.

9. Give and prove Napier's rules for the solution of right-angled spherical triangles.

10. Find by Newton's method of prime and ultimate ratios the chord of curvature through the focus at any point of a parabola.

11. Find the condition that the general equation of the second degree $Ax^2+Bxy+\ldots\ldots\ldots\ldots=0$ represent two straight lines.

12. Integrate the differential equations:

$$(a)\quad (x-y)\frac{dy}{dx}+3(x+y)=0$$

$$(\beta)\quad \frac{d^2y}{dx^2}+m^2y=\Sigma A\cos(nx+a)$$

$$(\gamma)\quad \left.\begin{aligned} A\frac{d^2\xi}{dx^2}+B\frac{d^2\eta}{dx^2}&=C\xi+D\eta \\ A'\frac{d^2\xi}{dx^2}+B'\frac{d^2\eta}{dx^2}&=C'\xi+D'\eta \end{aligned}\right\}$$

DIFFERENTIAL CALCULUS, &c.

1. Find $\frac{dy}{dx}$ in the following cases; $y=\sqrt{\frac{1+\tan x}{1-\tan x}}$, $y=\log.\log x$ and $x\tan y-y\sin x=0$. Also find the value of $\frac{dy}{dx}$ when $x=0$, $y=0$ in the cases $x^3-mxy+y^3=0$ and $(x^2+y^2)^2=a^2(x^2-y^2)$.

2. Show that (under certain conditions, which specify) $f(x+h)=f(x)+f'(x)h+\dots\dots+f^n(x+\theta h)\frac{h^n}{\underline{|n}}$ where θ is a proper fraction.

3. Deduce Maclaurin's Theorem for the expansion of any function of a variable in ascending powers of that variable, and apply it to develop y powers of x, when

(a) $y^3-ay+x^3=0$,
(β) $y=\sin(m\sin.^{-1}x)$,
(γ) $\frac{dy}{dx}-hy=x^2$.

4. Show that if $f'(x)$ passes from + to − or from − to + through the value 0 corresponding to $x=a$, there is a maximum or minimum of $f(x)$. Deduce the usual rule with regard to the first differential coefficient which does not vanish for $x=a$.

5. Find the equation to the normal to $y=f(x)$ drawn from (a, b), the normal being defined as longer or shorter than any line drawn indefinitely near it.

If $f(x)=\sqrt{cx}$ show that in general there can be drawn three normals, and that the sum of the ordinates of the corresponding points in the curve is zero.

6. Find the values of the following functions when $x=0$,

(a) $\frac{x^2}{1-\cos.5x}$,

(β) $(\cos.mx)^{\frac{n}{x^2}}$,

(γ) $\left(A+\frac{B}{x}+\frac{C}{x^2}+\dots\dots+\frac{R}{x^n}\right)^x$.

7. Find the conditions that $(x-a)^2+(y-b)^2=c^2$ may have the closest possible contact with $y=f(x)$ at the point (x, y), and find the corresponding value of c, which transform to polar co-ordinates.

8. Eliminate the arbitrary function from

$$\frac{x+y+z}{\omega^2}=\phi\left((x-y)\omega,\ (y-z)\omega\right).$$

9. Trace the curve whose equation is $y^3-axy+x^3=0$, distinguishing between the forms for different values of a.

10. Integrate the differential coefficients:

$\frac{\log.\log.x}{x}$, $\frac{1}{x\sqrt{a+bx+cx^2}}$, and find a formula of reduction for $\int\sin.^m x\,dx$. Find $\int_0^{\frac{\pi}{2}}\sin.mx\cos.nx\,dx$ when m and n are integers.

11. Find the length of the perpendicular from a, b, c, upon the straight line whose equations are

$$\frac{x-a}{l}=\frac{y-\beta}{m}=\frac{z-\gamma}{n}$$

l, m, and n being the direction cosines.

LOGIC.—*Examiner, Rev. Dr. M'Cosh.*

1. Explain exactly the difference between an abstract and a general notion, and show how they are related, giving examples.

2. What reality is there in the general and abstract notion? what are the errors which may arise from the improper use of abstract and general terms?

3. Name some of the principal Schoolmen. Into what sects were they divided in regard to the subject of universals? Give a general account of the controversies, with remarks.

4. How do generalization and division stand related to each other? Explain the nature of logical division, and give the rules.

5. "It is not the highest end of man to eat, and to drink, and to earn money;" what are the terms in this proposition; and what the nature of these terms? Which is the subject, and which the predicate? Convert the proposition. Interpret or explain it, both as to the extension and comprehension of the notions.

6. Why must the conclusion in the Second Figure be negative and in the Third Figure particular?

7. Put the following in correct form, designating the moods and figures, and reducing any syllogisms which may not be in the First Figure: "We cannot argue that all monocotyledonous plants have parallel veined leaves, for the dictyogens, which are monocotyledonous, are net-veined."

8. What is the nature of hypotheticals? What are the rules? Examine the following, and reduce it to a categorical: "Were it not full of a discarded Cartesian metaphysics, the Port Royal Logic would be one of the best compends of Logic, but it is full of such metaphysics, and so it is not one of the best compends."

9. What is Whately's division of fallacies? To which head is the "Fallacy of Objections" to be referred? State the nature of that fallacy, and illustrate it by supposing it to be objected to the curriculum of the Queen's Colleges, that it is too extensive.

10. What are Mr. Mill's admissions in favour of the Aristotelian analysis of reasoning, and what his objections to that analysis? How can the objections be answered?

11. "A clever man shut up alone, and allowed unlimited time, might reason out for himself all the truths of mathematics, but he could never tell, by any effort of reasoning, what would become of a lump of sugar if immersed in water." Point out the difference of the processes involved in these two cases, and, in doing so, explain the phrases, *a priori* and *a posteriori*.

12. What important part does analysis or the decomposition of facts act in physical investigation?

13. What is meant by a law of nature? What does Bacon represent as the end aimed at in physical investigation? What does he seem to mean by Forms? What is the nature of "Laws of Phenomena?" How are they distinguished from Causes?

14. The Comet of Encke should come back in a certain time, according to the law of gravitation, if it moved *in vacuo*, but it comes back two days earlier than this. On the supposition that it moves in an ether it should come back earlier, and so it is concluded that it probably moves in an ether. Is there hypothesis or theory here? According to what Canon of Induction is the conclusion drawn? Enunciate the rule.

15. As the earth is inhabited, we may conclude that so also are the other planets; what would be necessary to make the reasoning valid?

16. What is the nature of the argument from Homology and Teleology in Natural History. Give examples. How does this argument differ from that in last question?

CHEMISTRY.—*Examiner, Dr. Andrews.*

1. Describe the method by which Dalong and Petit determined the absolute expansion of mercury, and proved that the expansion of that metal increases as the temperature rises.

2. State fully the method of determining the freezing and boiling points of a thermometer, and the corrections, if any, to be applied to the direct observations.

3. Give an account of the general laws of the conduction of heat.

4. How is it shown that certain surfaces radiate heat better than others?

5. Describe the preparation and principal properties of the binoxide of hydrogen.

Appendix, No. 8.

Scholarship Examinations

6. What is catalytic action? Give some examples of it.

7. What are the distinguishing properties of ozone, and under what conditions is it prepared, and also found in nature?

8. Give an account of the principal hydracids, and of their composition and properties.

9. What are the constituents of the atmosphere, and their relative proportions, and the method of determining them?

10. What are the sources from which the halogene elements, chlorine, bromine, and iodine, are derived?

11. Describe the preparation and principal properties of chlorine gas.

12. Mention the principal bodies which are known to possess bleaching properties.

13. Give a general account of the compounds of fluorine, and of the uses to which they have been applied.

14. Describe the salts of potash which are employed in the arts.

15. How are the salts of potash distinguished from those of soda?

16. Give some account of the preparation and properties of aluminium.

17. What are the varieties of sugar, and how are they distinguished from one another?

18. Give an account of the acetic acid fermentation, and of the reactions which accompany it.

19. Give some account of the methyl, ethyl, &c., series, and of the acids derived from them.

20. On what does the hardness of a water depend, and how is its amount determined?

21. What are the laws of isomorphism? Illustrate these by some examples.

22. Describe the manner of observing circular polarization in a liquid, and mention some solutions which possess that property.

23. Give a description of Daniell's constant battery, and of the chemical actions which take place in it.

24. How did Faraday show that a definite amount of chemical action produces a definite amount of electrical force in the voltaic pile or battery?

Natural History.—*Examiner, Dr. Dickie.*

ZOOLOGY.

1. Describe the peculiarities in the internal organization of Cetacea and Phocidæ.

2. Describe the principal modifications of anterior and posterior limbs in Birds.

3. State the orders of the class Reptilia, and give their characters.

4. Cirripeda were formerly considered to be nearly allied to Mollusca; state the position now assigned to them in the system of classification, and give reasons.

5. State the true nature of whalebone, ivory, and pearl; name the animals which yield them, and the classes, orders, and families to which they respectively belong.

6. State what classes of Articulata you consider to present the nearest approach to the type, and those which deviate most from it.

7. Refer the following to their classes, viz.: Pteropidæ, Simiadæ, Alaudidæ, Corvidæ, Gadidæ, Sturionidæ, and Salmonidæ.

3. Refer the Macroura to their place in the system, and state their characters.

BOTANY.

1. State the nature of the deviations from the typical cell in the medullary rays of Exogens, and in the Epidermis.

2. State the true nature of the anther, and describe its modifications.

3. Describe and illustrate by plans the following forms of vernation: conduplicate, circinate, and revolute.

4. Describe the modes of dehiscence of the anther.

5. State the structures and arrangements usually associated in the organs of nutrition and reproduction of Endogens.

6. Give the classification of fruits, usually adopted. Mention examples.

7. State the functions usually assigned to the different floral whorls.

8. Mention any two of the larger natural orders of British plants, in which there is comparative uniformity of the general characters, and also any two presenting greater obvious diversity of the general characters.

9. Mention any British natural orders, examined last session, in which the floral whorls make the nearest approach to the typical flower; and others presenting greater obvious departure from the type.

Natural Philosophy.—*Examiner, Dr. Stevelly.*

GALBRAITH AND HOUGHTON'S MECHANICS AND HYDROSTATICS.

1. A rope which makes an angle of 60° with the ground, just moves a weight to which it is attached when drawn by a force of 128lbs.; what force acting in a direction parallel to the ground would be sufficient to draw that weight along at any velocity once given to it?

2. The resultant of two forces which act at right angles to one another is exactly double of one of the components; find the direction of that resultant relatively to each component.

3. Find what single force is equivalent to two parallel forces acting at the same instant on two distant but rigidly united points.

4. Three equal weights are attached to the angular points of a uniform triangular plate: find the centre of gravity of the weights and plate.

5. Show how the equation $P.h = w, n, t$, is obtained, and explain its terms.

6. A gallon of water weighs 10 lbs., and the horse power of English engineers is 33,000 lbs. raised through one foot in a minute: find the number of gallons of water that five steam engines, whose united effective horse power with the pumps they work is 1310, will pump per hour from a depth of 73 fathoms.

7. Explain the difference in the manipulations in weighing with the common balance, with the steel yard, and with the Danish balance.

8. The weight and friction on a rack and pinion, the radius of which is three inches, are together equivalent to one ton; what power will just equilibrate this, acting in the most effective way on a winch handle which turns the pinion, the radius of which is one foot three inches?

9. Explain the principle of "the constancy of work done by a machine."

10. Give the definitions for "the specific gravity," "the mass or quantity of matter," and "the quantity of motion," sometimes called the momentum of a body.

11. Explain the relation between "statical force" and "dynamical force;" and give the equation which connects them, and explain its terms.

12. Find the number of seconds during which a dynamical force of 11·25 must act, to produce a velocity of 90 feet per second.

13. State and explain the law which governs the composition of velocities.

14. Show that the total pressure at any point of the surface of a fluid mass which remains in equilibrio must be perpendicular to that surface.

15. Show that the pressure at any point within a fluid mass which is in an equilibrated state must be equal in every direction.

Engineering Scholarships.

Second Year Students.

Mineralogy and Geology.—*Examiner, Dr. Wyville Thomson.*

1. In what formations, and under what circumstances, is gold usually found.

2. What are the means used for separating silver from lead?

3. What are the principal ores of mercury?

4. In what formations do we find the best building stones? and give examples.

5. What are the general characters of the fauna of the middle and lower tertiary formations?

6. Name some of the characteristic fossils of the glacial clays of the Clyde, and state the *recent* geographical distribution of the same species.

SURVEYING.—*Examiner, Professor Godwin.*

1. Describe a method of surveying for a line of railway between two distant points, there being no map of the country for the guidance of the engineer.

2. State the method of making survey and sections for canals, and the mode of supplying them with water.

3. In the absence of levelling staffs, and with the theodolite only, how could the section of a country be taken and plotted?

4. What is meant by traversing in surveying?

5. What is meant by an ill-conditioned angle in Trigonometrical Surveying?

6. Describe the method of measuring the true horizontal distance between two distant points, the country being mountainous or undulating.

7. Describe the method of laying out a reverse curve for a railway.

8. Describe the method usually adopted for effecting the drainage of extensive tracts of low lands.

9. In a right-angled triangular field the base and perpendicular are 1570 and 1352; what is the content?

10. What quantity of land does a rhombus contain, the base of which is 1490, and perpendicular breadth 1280?

11. Required the area of a trapezoid whose parallel sides are 1080 and 890, and whose direct distance one from the other is 610 links.

12. The content of an elliptic field is required, the axes of which are 740 and 568.

AGRICULTURAL SCHOLARSHIPS.

NATURAL HISTORY.—*Examiner, Dr. Dickie.*

ZOOLOGY.

1. Describe the general structure of the nervous system in Vertebrata, and in Articulata.

2. Describe the course of the circulation in Mammalia.

3. Describe the structure of the foot in the horse, ox, and pig.

4. Name the principal domesticated *Vertebrata*, and state the classes and orders to which they respectively belong.

BOTANY.

1. Describe the structure of the spiral vessel.

2. State the true nature of the onion bulb, and of the organ called tuber.

3. Name the organs concerned in the nutrition of the plant.

4. Mention useful plants belonging to the following families, Papaveraceæ, Cruciferæ, Leguminosæ, and Polygonaceæ.

MEDICAL SCHOLARSHIPS.

THIRD YEAR STUDENTS.

PRACTICAL CHEMISTRY.—*Examiner, Dr. Andrews.*

1. Describe the methods of taking the specific gravity of solids and liquids.

2. How are the bases characterized? Enumerate the more important of them.

3. What are the bases comprehended in the second class, and how are they distinguished from one another?

4. What are the constituents of bone earth?

5. Describe the mode of analysing a solution containing $Fe\,O$, $Fe_2\,O_3$ and $Al_2\,O_3$.

6. What bases produce coloured solutions with ammonia, and how are they distinguished from one another.

7. If hydrochloric acid, or a soluble chloride, produce a precipitate in a solution, what bases may be present.

8. What are the tests of the different modifications of sugar?

9. Describe the method of analysing atmospheric air.

10. How is uric acid separated from urine, and what are its principal reactions?

11. Describe the method of discovering the presence of arsenic in an organic liquid, and the method of distinguishing it from antimony.

12. State the composition and mode of preparing the oxides of arsenic.

13. What are the tests of meconic acid, of morphia, and of strychnia?

NATURAL PHILOSOPHY.—*Examiner, Dr. Stevelly.*

PHYSICS.

1. Explain how the three states in which any kind of matter may exist are essentially distinguished from each other.

2. Describe the apparatus with which Oersted examined the compressibility of water, and other liquids, and give the leading results which be obtained.

3. Small bodies, when they float near each other on a liquid, are observed under some circumstances to approach and under others to retire from each other. State the circumstances under which each event is found to take place. Explain the cause, and give the law which governs the force with which they are found to approach or retire.

4. Enumerate the mechanic powers; and enunciate the general statical principle which determines the relation of the resistance to the equilibrating power on any of them.

5. Explain the mechanical and physical principles on which the isochronism of the beats of the balance of a chronometer depends.

6. State some of the experiments by which it is shown that the pressure of a fluid is independent of the shape of the vessel which contains it, and enumerate the quantities on which that pressure essentially depends.

7. Explain the method of taking the specific gravities of coherent masses; and the precautions requisite to be attended to.

8. Explain some of the simplest modes of determining the specific gravities of liquids, and the precautions to be attended to when taking them.

9. Explain the experimental proof of Boyle's or Marriotte's law, after you have clearly enunciated that law; and state to what extent the experiments of the French philosophers determined the strict accuracy of that law.

10. Write down the formula which connects the pressure, density, and temperature of an air or vapour, and explain its terms.

11. Explain the methods of taking the specific gravities of common air and of vapours; the distinction to be observed between them; and the precautions to be attended to when taking each.

12. Explain the practical use made by Fraunhofer, and his successors, of the dark lines in the solar spectrum.

13. Explain the diffraction fringes of light, and point out the manner in which they are accounted for by those who hold the emission theory of light, and by those who hold the undulatory theory.

14. State the experimental proof that radient heat may be reflected.

15. By what experiments has it been shown that radiant heat may be polarized?

16. Explain the peculiar construction of Daniell's galvanic battery, and the advantages which a Daniell's cell has over those previously in use.

SENIOR SCHOLARSHIP EXAMINATIONS IN ARTS.

MODERN HISTORY.—*Examiner, Professor Craik.*

1. State the subject of each of the first six chapters of Hallam's *Middle Ages*.

2. State in which of what had been the provinces of the Western Roman Empire each of the tribes of the invading barbarians settled after its overthrow.

APPENDIX, No. 8.

Scholarship Examinations

3. Relate the history of Clovis.

4. Relate the history of the revolution which brought about the fall of the Merovingian dynasty of French kings, and the establishment of the succeeding dynasty.

5. Sketch the course of events which substituted the third for the second race of kings in France.

6. Give an account of the succession to the French crown from Hugh Capet to Charles IV.

7. Give some account, with dates, of the Consul Crescentius, of Fra Giovanni di Vicenza, of Arnold of Brescia, and of Nicola di Rienzi.

8. Sketch the course of the contest of Frederic Barbarossa with the cities of Lombardy, giving the necessary names and dates.

9. Relate the history of the establishment of the Normans in Italy and Sicily.

10. Sketch the history of the formation of the several Christian kingdoms of Spain.

11. Relate the progress of the early Saracenic conquests, and the history of the Caliphate down to the end of the 13th century.

12. Give an account of the Ottomans, or Osmanli Turks, down to their capture of Constantinople.

13. Relate the succession of the Emperors and Kings of Germany from Charlemagne to Conrad IV., indicating the connexion of each with his predecessor, and giving as many dates as you can.

14. Explain who Henry the Proud was by descent, by his immediate connexions, and by his possessions.

15. Sketch the history of the connexion of the House of Hapsburg (or Austria) with the Empire, and also with the kingdoms of Bohemia and Hungary.

16. By whom and when was the Golden Bull promulgated? and whom did it constitute electors to the empire?

17. State (with the dates) what were the great reforms established by the Emperor Maximilian at Worms, and afterwards in the division of the Empire.

18. Relate the origin and formation of the Swiss Confederacy, giving the dates of the battles and other events.

19. Explain the meanings of Alodial, Feudal, Homage, Commendation, Subinfeudation, Alienation, Vassal, Lord, Frérage, Francfief, Capitanei, Vavassors, Châtelains, Bachelors, and Damoiseaux.

20. Explain the various feudal incidents, noting which of them were general, and the extent to which the others prevailed.

21. When, and by whom, were the *Libri Feudorum* drawn up?

22. Enumerate the six great feudatories who were called the (secular or temporal) Peers of France, and indicate the territory belonging to each.

23. Give the dates, the names of the leaders, and the principal results of the first four Crusades.

24. Explain the claim of the English King, Edward III., to the crown of France, noting the several principles of succession which it assumed.

SENIOR SCHOLARSHIP EXAMINATIONS IN MEDICINE.

SURGERY.—*Examiner, Dr. Gordon.*

SURGICAL ANATOMY.

1. Describe the fractures and dislocations of the scapular end of the clavicle, and their treatment.

2. Describe the parts situated within the inguinal triangle—that is within the space bound above by Poupart's ligament, below and externally by the sartorius, and internally by the abductor longus; mentioning the diseases most frequent in that region, and their differential diagnosis.

3. Describe the relations of the arch of the aorta, and the symptoms referable to those relations in cases of aneurism.

4. Describe the boundaries of, and the parts within, the popliteal space, the diseases observed within that space, and their differential diagnosis.

PRACTICE OF MEDICINE.—*Examiner, Dr. Ferguson.*

1. What are the sources of the blood of hæmoptysis, and the means of diagnosing each?

2. What are the chief causes of peritoneal inflammation, its symptoms and pathology?

3. Enumerate the genera and species, or classes and orders, into which fevers have been divided.

4. Give the pathological changes produced in the lung by pneumonia, and the physical signs of each.

5. State the complications and sequelæ of variola that are most formidable.

6. Enumerate all the physical phenomena that have been observed as indicative of a cavity in the lung's substance.

DUBLIN: Printed by ALEX. THOM & SONS, 87, Abbey-street,
For Her Majesty's Stationery Office.